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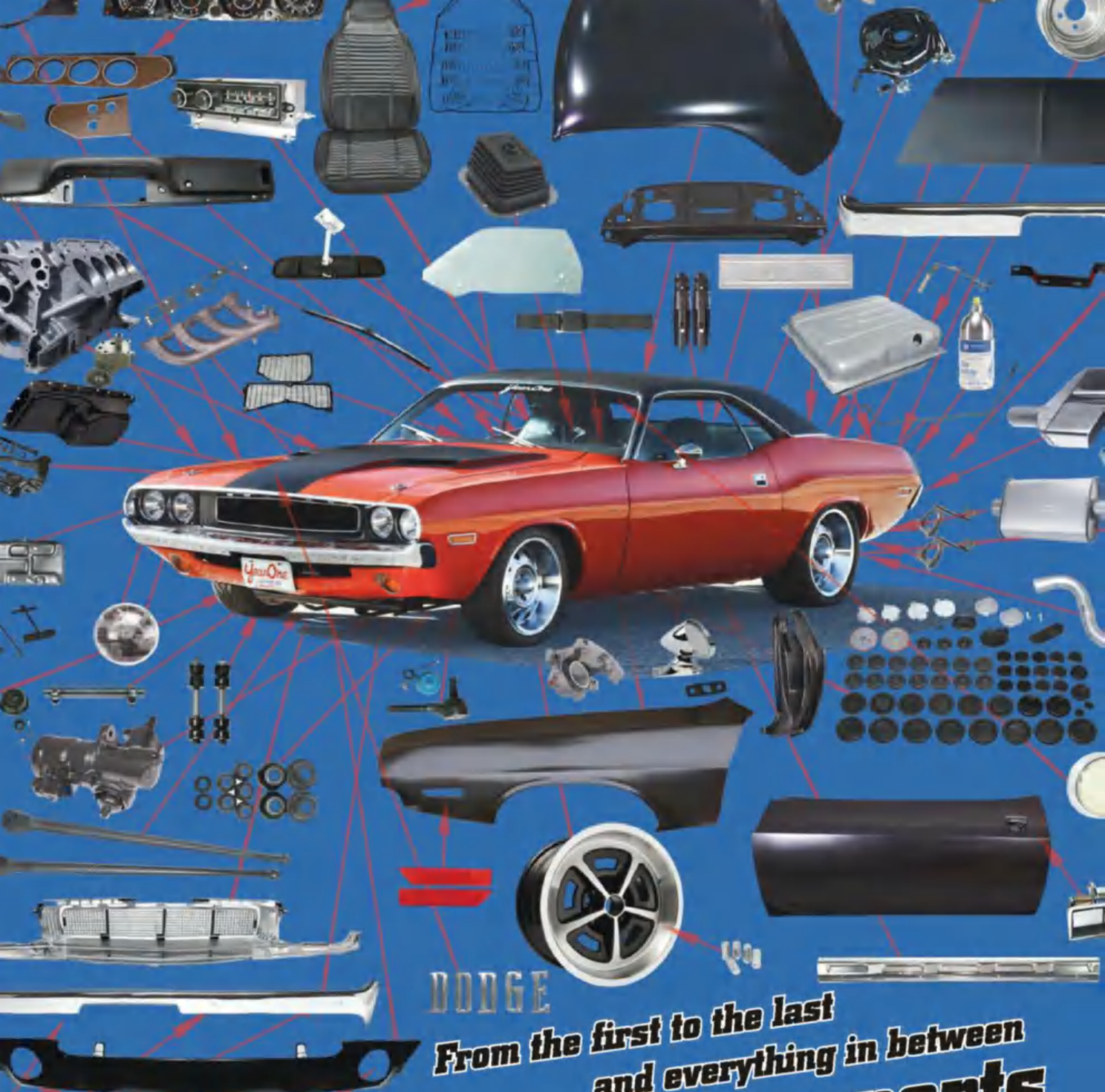
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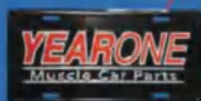
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Complete kit includes heads assembled with: 440-4 rocker assembly 1.5 or 1.6, 440-9K push rod kit, 440-33 complete gasket set, 400 or 440-6 valley plate, 440-10 external oil kit, 440-11 rocker studs, 440-7 or 8 valve covers, 400 or 440-2 or 3 manifold, 440-11 rocker shafts

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CNC 506 port opening  
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## 426 LEGEND ENGINES AND CYLINDER HEADS

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Mod-Man intake

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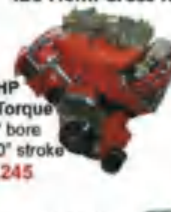
### 426 Hemi 2 x 4 Carb



515 HP  
500 Torque  
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3.750" stroke

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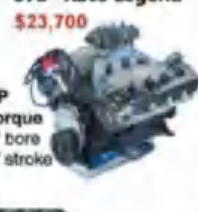
### 426 Hemi Cross Ram



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3.750" stroke

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### 572" Race Legend



960 HP  
760 Torque  
4.500" bore  
4.500" stroke

\$23,700

### 526 Street Legend



Supercharged

950 HP  
900 Torque  
4.310" Bore  
4.500" Stroke

\$22,995

### 426-1 Legend Kit

Head assembly, shaft clamp kit, rocker side shims, manifold bolt kit, spark plug tubes, valve covers and bolts, rocker side springs, push rod kit, 426-2 or 3 manifold, Indy roller rocker arms, removable valley plate, shaft oil restrictors, head studs, thick wall rocker shafts, tube O-rings, complete gasket set.

On Sale... \$6,675



### 426-SRK Legend Kit

includes assembled heads with: 2.25 x 1.94 200cc port, Indy roller rocker arms, Rocker side shims and springs, Head studs and manifold bolt kit, Spark plug tubes and O-rings, Chrome valve covers, Mod-Man choice of tops 1x4, 2x4, 3x2 blower top, Push rod kit and complete gasket set.



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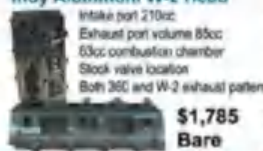
### Rectangle Port (360-1) Or Oval Port(360-2) Head Kits

Kits include heads assembled with 360-4 rocker assembly 1.5 or 1.6, 360-9K push rod kit, 360-14 rocker shafts, 360-11 rocker studs, 360-3 intake, 360-16 head bolts, head gaskets, intake and exhaust gaskets.

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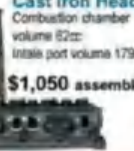
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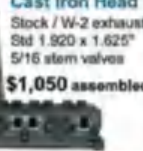
### Indy LA-X Cast Iron Head



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# MOPAR

## ACTION



## 14 SECRETS OF THE GENERAL LEE

The classified never before seen behind the scenes inside story of the first 3 General Lees that appeared in the Dukes series. Sure beats another red '71 Hemicuda or Ehrenberg's bar-mitzvah cake on the cover, eh?

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There certainly are enough crimefighters out there, so this tricked out, award-winning 2011 Challenger scores big for the other team.

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Want your '69 Charger to be different from the bazillion others out there? Ever consider prying off the body and bolting it to a Viper chassis? Here's how one Mo'fan did it.

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Gold Duster, Space Duster, Feather Duster. Silver Duster, Crop Duster etc. Here's the Duster package the factory forgot to make.

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We'll bet half our slush fund that you've never seen a Neon (remember those?) like this. So say "Hi" to this visually startling 500 HP SRT4 that says "Bye" to Mustangs (like we once did).

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Choose and tune the best street carb. We do it for you so you can go out for a pizza instead.

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How would you like to squint at a microfiche screen for 14 hours a day going through 3 million Chrysler IBM punch cards (production records) to try and document every Chrysler performance car from 1955 through 1967? We'd rather watch the full run of "The Sopranos," but Darrell Davis did just that. An amazing story.

### Chrysler's STOCK CAR Connection • Part 18

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Bill LaDow caps this series, ending it in '68 with Plymouth lowering its profile and Petty defecting to Ford.

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Geoff Stunkard 's Hemi series looks at the late-night exploits that put the final icing on the legendary Hemi cake.

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I'll take a size large, please.

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Another home run for the Musclecar Nats with the largest assemblage of '70-'71 Hemi E-body convertibles since the Big Bang.







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**Stanley R. Harris**  
Publisher

**Cliff Gromer**  
Editor

(email: cliffgromer@yahoo.com)

**Richard Ehrenberg S.A.E.**  
Engineering Editor  
(email: tech@richardehrenberg.com)

**Jim Koscs**  
Feature Editor

**Bill Erdman**  
Photography Director

**Al Dente, TheBruntBros.**  
Contributors/Troublemakers

**Scott Longman**  
Instigator

**Mark Grubelich**  
Rocket Scientist

**Rory Slikkin**  
Art Director

**Tim Hannon**  
Circulation Director

**Brett Underwood**  
Advertising Director  
(704) 896-1959  
(email: bundrwood@aol.com)

**Subscriptions**  
(212) 462-9525  
subscriptions@harris-pub.com  
backissues@harris-pub.com

**Editorial information:**  
(212) 807-7100

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1969 'General Lee' Charger and 'Joker' '11 Challenger. Photos: TheBruntBros and Charlie Lewis

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# MAXIE MANIFOLD MYSTERY

**B**ack in our Feb. 2016 issue, we featured a 1964 426 Super Stock (Max Wedge) Plymouth Savoy owned by Bob Chaves and restored by Mike Mancini of American Muscle Car Restoration. We called this a Mopar Action Reference Restoration with a caveat by Rick Ehrenberg that the exhaust manifolds should have been painted engine color (and not pitted). Mancini insisted that the unpainted manifolds were correct. Ehrenberg remembered seeing a new '62 Max Wedge with orange painted manifolds as well as used ones at swap meets with traces of orange around the mounting flange (the factory paint would have burned off in short order). Not doubting my tech editor, but intrigued by this painted/unpainted question I contacted several well-known Mopar and Max Wedge experts in the hobby. The results were interesting albeit inconclusive.

We do know that Max Wedge powertrain assemblies were mated to the body from the bottom—the usual procedure. But unlike other engines that were installed with exhaust manifolds intact (and painted while bolted to the engine) Max Wedge engines were installed sans exhaust manifolds because the manifolds wouldn't clear the chassis. The manifolds were bolted up after the engine was in the car. Tom Hoover had confirmed this in a published interview.

Dave Wise, who has 20+ years' experience in assembly line engine/vehicle processing, told us the factory used a large metal frame supporting six engines, 3 side by side, to transport big blocks from the engine plant to the assembly plant by truck. This arrangement would not have worked with Maxies if the manifolds were attached, they would have been too wide to fit, and it's doubtful the factory would have had special racking just for them. 'Course, no problem with standard arrangement if the manifolds were off. Wise's brother, also in the same line of work remembers seeing random pallets of unpainted manifolds (he believes they were MW, but can't swear to it) along with pallets of leaf springs—both painted and unpainted—at the assembly plant. Wise believes the manifolds were installed after the fact in an offline "9190" area. If all this is true, how would the manifolds have gotten painted?

Max Wedges were assembled at Chrysler's

Marine & Industrial division, about 9 miles from the Lynch Rd. plant. Would M&I have painted the engines with manifolds and then removed the manifolds? Unlikely, but possible. While most engine plants painted engines with a fogging machine, we don't know if M&I had a fogger or spray booth or whatever. Spraying around the manifolds would have been a problem and probably would have left areas of the block unpainted. Owners wouldn't paint them, most swapped the manifolds for headers and went racing. Most likely M&I painted the blocks sans exhaust manifolds.

Upholding the "painted" side of the picture, we have Roger Gibson who has looked at original

Max Wedge survivors. He says "Depending on condition of the car, most of the time you can find paint around the mounting flanges and nut."

Jim Kramer and Greg Lane go with "unpainted." Ron Mezich who has seen only two manifolds with paint out of the 50 he has handled in the past speculates that the manifolds could have been painted after the fact as during a subsequent engine rebuild.

Factory PR photos show nicely detailed and painted (including manifolds) MW engines that were not typical of production units. Greg Lane supplied us with a B&W photo of a new '63 MW engine compartment. The manifolds are flawless

and quite dark. Possibly paint? Ehrenberg says "definitely new raw cast iron." 'Course there's a lot of speculation in all of this, and this mystery may never be solved until someone steps forward who worked at M&I and/or on the line at Lynch Rd. with factual first-hand experience.

Getting back to Bob Chaves' Maxie, since his was a pilot car with some weird non-production details, including the silvery "natural" (maybe actually bead-blasted recently) color master cylinder cover (production lids were black phosphate) we are gonna have to defer to Mike Mancini in this case. Conclusion: Never say never with Ma Mopar!

'Til next time



**Bob Chaves' restored '64 Max Wedge Savoy.**

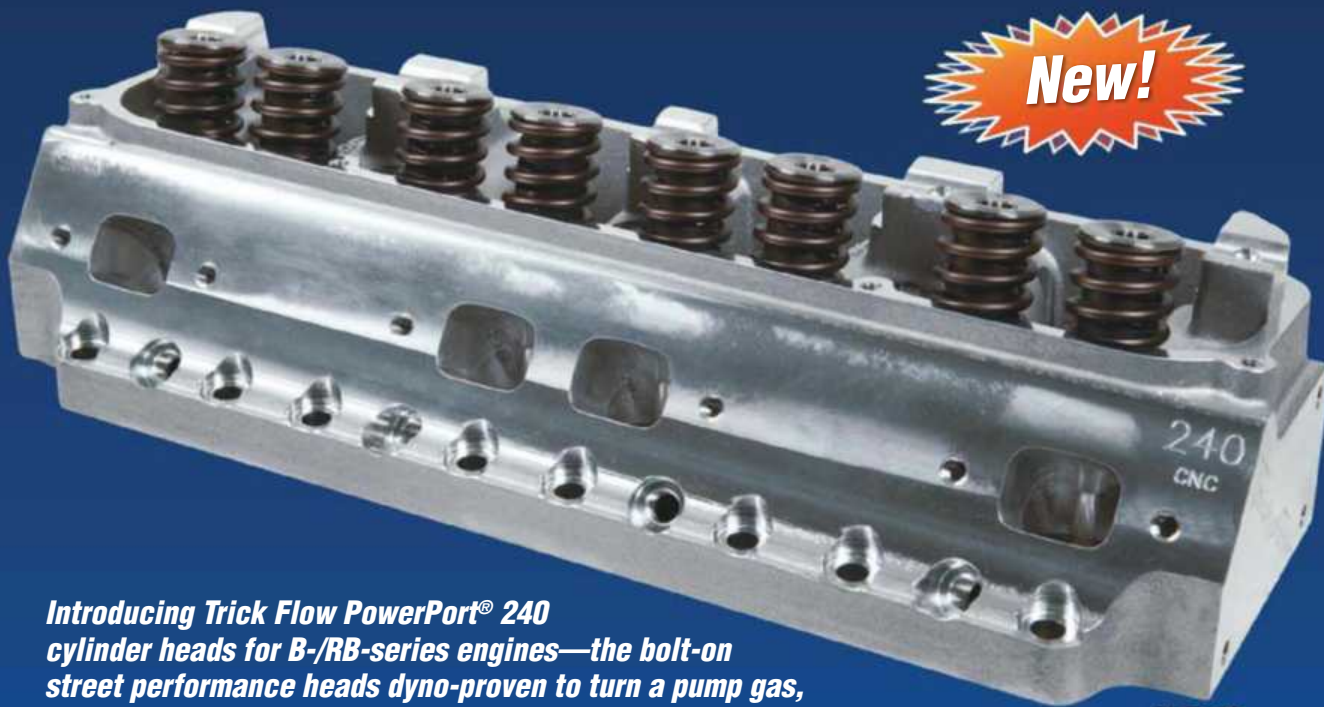


**Original new '63 Max Wedge from back in the day.**

*Cliff*  
Cliff Gromer



# Turn Your 440 into 600+ HP Brute.



**New!**

**Introducing Trick Flow PowerPort® 240 cylinder heads for B-/RB-series engines—the bolt-on street performance heads dyno-proven to turn a pump gas, .030" over 440 with 10.5:1 compression and a 241/246 @ .050" duration cam into a 600+ HP brute.**



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Pricing starts under \$2,000 for a pair of fully assembled heads. A tall-deck aluminum single-plane intake manifold and a complete top-end engine kit will also be available soon.

## Fast Specs

Intake Runners:	240cc CNC Street Ported
Exhaust Runners:	74cc CNC Street Ported
Combustion Chambers:	78cc CNC-profiled
Intake Valve:	2.190"
Exhaust Valve:	1.760"
Valve Angles:	15°
Valve Seats:	Ductile iron
Intake Flow:	334 cfm
Exhaust Flow:	262 cfm

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## Enders and Coughlin to Carry NHRA Pro Stock Banner in 2016

A pair of champions will team up and carry the Mopar banner in 2016, as back-to-back NHRA Pro Stock champ Erica Enders and five-time overall Pro Stock title winner Jeg Coughlin Jr. will lead the charge for the brand in the popular factory hot rod class. The combination of Elite Motorsports teammates Enders and Coughlin steering fuel-injected, Hemi-powered Dodge Dart cars puts winners of the past three NHRA Pro Stock World

Championships under the Mopar banner. Defending and two-time champ Enders, who competed in a Mopar-powered car in 2006-2007, will chase a third consecutive title behind the wheel of her new Mopar Performance Dodge Dart GT NHRA Pro Stock car for Elite Motorsports. Teaming up with Enders in the new Pro Stock era of fuel injection and scoop-free hoods is a driver who has already placed himself among the legends of the sport and

who is also no stranger to the Mopar brand. Coughlin clinched his most recent of five Pro Stock championships driving a Mopar-powered Dodge Dart in 2013.

Coughlin will man the "Magneti Marelli Offered by Mopar" Elite Motorsports Dodge Dart GT NHRA Pro Stock car in 2016, looking to add even more milestones to a Hall of Fame career that includes 76 victories, with 58 in Pro Stock, good enough for fourth all-time in the class. Coughlin is the first and only driver to score wins in seven NHRA classes (Pro Stock, Comp, Top Dragster, Super Gas, Super Stock, Stock and Super Comp), the only driver in NHRA history to win in four different classes in the same season (1997, Pro Stock, Super Stock, Super Gas, and Comp) and the only driver in the pro ranks to win from



Jeg Coughlin Jr.



Erica Enders



every qualifying position, No. 1 to No. 16.

Mopar will continue to fuel its winning partnership in the NHRA Funny Car class with DSR, one of the elite teams in all motorsports, during the 2016 campaign. Don Schumacher first raced a Mopar-powered Funny Car more than 40 years ago, seizing five wins between 1970 and 1973, and began fielding Mopar-powered Funny Car machines in his role as team owner starting in 2003. In 2016, Matt Hagan will once again helm the Mopar Express Lane Dodge Charger R/T.

## Hemi Engine Earns British Drag Racing Hall of Fame Global Achievement Award for Mopar

The drag racing legacy of the Mopar brand and its iconic Hemi V8 engine was honored by the British Drag Racing Hall of Fame (BDRHoF) with the organization's Global Achievement Award.

Pietro Gorlier, Head of Parts and Service (Mopar), FCA—Global,

accepted the award during a ceremony at the Savill Court Hotel in England. In his remarks, Gorlier paid tribute to Tom Hoover, recognized as the "Father of the 426 Hemi," for the role he played in the development of the legendary Mopar engine. Hoover passed away earlier this year at the age of 85.



## Dodge Charger Earns 2016 ALG Residual Value Award

For the second time in two years, Dodge Charger has earned the Residual Value Award in the "Full-size Car" category from ALG, the industry benchmark for residual values and depreciation data. For Dodge, it's not enough to design and engineer the 2016 Charger as the quickest, fastest and most powerful sedan in the world; nor is it enough to give it the segment's most innovative all-wheel-drive system for those that need maximum all-weather traction and fuel efficiency. Instead, Dodge continues to build on the brand's promise and deliver a lineup of Charger models with world-class power, efficiency, technology, authentic materials and standout styling – all to make America's only four-door musclecar one of the hottest and most desirable sedans available today. ■





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**+20 HP +23 lb.-ft. of torque**

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- Valve Springs
- Tie Bar Kit
- Heavy-Duty Push Rods
- Upper and Lower Gasket Set
- Two Scat Pack 2 Badges

Must have Scat Pack 1 kit

**+56 HP +30 lb.-ft. of torque**

### Mopar Scat Pack 3 Performance Package

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- Gasket Set
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- Mounting Brackets and Hardware
- Scat Pack 3 Badges

Must have Scat Pack 1 & 2 kits

**+75 HP +44 lb.-ft. of torque**



**IMPORTANT NOTICE:** It is illegal and a violation of the federal Clean Air Act to operate a vehicle previously emission certified with this package on a street or highway. Doing so potentially subjects the operator and the installer to civil penalties of up to \$37,500 per day, per vehicle.

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## FUEL PUMP FREAKOUTS...X3!

### TRANNYS DOWN UNDER

I have some TorqueFlite transmission numbers I need info on. I think the first two are 1976-77, they are stamped 4028424. Last transmission no. is H2 538334.

— Brian Dowell,  
Goldsborough, Australia

Brian:

4028424 is a low-RPM-governor '76-'77 727B. Perfectly good unit if you simply swap in a high rev governor plus the usual tricks (omit accumulator spring, increase line pressure, etc.) and maybe a shift kit and/or other upgrades, depending on potential usage.

2538334 is from a '66, 361/383, also low-speed governor. Would be OK behind anything up to 400 CID, but beware: it has 19-spline input, requiring a '66-down torque converter.

The 424 is, by far, the better transmission.

### GAS PAINS

I have a '72 Charger, 400 that sat around for 10+ years, indoors in dry storage. I wanted to get it running. I hooked up a jumper battery, just a loud "click". Fast forward, it was seized, but removing the plugs and putting a half-pint of penetrant in each cylinder loosened it up and I was able to rotate it with a breaker bar. I decided to put in some fresh oil before trying again to start it. When I took out the drain plug, gallons of gasoline came out of the pan, it was virtually full! Where did this come from and how do I proceed?

— Sal Russo. Brooklyn, NY

Sal:

The fuel pump is shot. Here's what happened: The internal rubber diaphragm failed, allowing fuel to siphon from the tank, though the

### HOW TO GET HELP:

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**RICHARD EHRENBURG**

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### Ground Rules:

- If you want to submit your question via e-mail, please use the online submission form at www.moparaction.com. If we ask for more info, send back all existing text with your reply, please.
- Snail-mail must include a SASE.
- All letters, electronic or otherwise, must include a full name and a least your city and state. You can request that it be withheld,

however, and, if we had any the night before, we might even honor your request.

- "20 questions" letters instantly get shredded and the scraps forwarded to Mopar Muscle. So—ask one clear question please, we're a sleazy magazine, not an encyclopedia publisher. We won't tell you step-by-step how to swap a 2016 Hellcat Hemi into your 1899 Fiat.
- Remember, we have one old geezer tech editor (when he's awake and sober) and well over 100,000 readers. We do the best we can with our meager resources. Our reply rate does at times approach 50%, but it varies with our "real" workload at the moment.
- All letters are subject to editing to make us look like we know all the answers.

Thanks, Rick.



If the fuel pump diaphragm fails (rotted, torn, etc.) fuel will have a direct path from the tank to the crankcase.

mounting flange area, and into the sump.

Change the pump, naturally. How you proceed from there depends on how bad (stale or gooey) the fuel is. At a minimum, a new fuel filter is called for.

Either the carb (a few seconds spray in each barrel), reinstall the air cleaner, and give it a shot. Basically, treat it similarly to a fresh engine start-up. Try to get it to start and rev ASAP, hold revs up at least 2,000 RPM for several minutes.

Hopefully, you did not change the oil filter. If you did, you might consider running the oil pump with a drill motor to fill the new one, less effective (on a big block) is manually filling the new one to soak the pleated paper.

If it doesn't start, or won't stay running after a few shots of ether, you'll need to go over the fuel system, from tank, in-tank filter and pickup tube, through lines and hoses, and the carburetor.

### TRANS PLANS

First off, I love your tech articles and the EFI conversion on the Bold Beeper. My dad and I have been working on our '82 Dodge D-150 pickup for the past few years and we just swapped in a 1955 331 Hemi. It's currently got a 727 behind it, but we just bought a junkyard A518 out of a '94 pickup. We are on a very tight budget and my dad thinks that swapping in the CPU from the '94 will be easiest to make the A518 shift right, but I want to

buy the kit from PACT. Who's right? I plan on applying the EFI conversion front the Bold Beeper to our 331 Hemi sometime in the future.

Thank you for your awesome knowledge.

— Alex Ellsworth,  
Canandaigua, NY

Alex:

If you're on a budget, simple toggle switches for the OD and lockup will get the job done. The lower three gears in every A518 are automatically hydraulically shifted, just as in your 727. If you inadvertently leave the OD switch on, it will still downshift to first when you stop, it will simply upshift to OD immediately after shifting to third.

Please turn to page 90





✓Yes



✓Yes



✓Yes



✓Yes



✓Yes



xNo



✓Yes



✓Yes



✓Yes

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## WHAT EXACTLY IS "MATCHING NUMBERS?"

Wanna submit a resto question? Please follow the instructions on page 12.

### LIVE FROM NEW YORK

Mr. Ehrenberg, Two questions if I may...(1) The filler panels between the front bumper and grille on '68 NYers are painted some kind of silver. What is the paint code for this finish? (2) My 440 NYer came with the 624 HD suspension pkg. What exactly did this comprise, apart from the obvious HD springs/shocks?

— Chris Sculthorp  
Asheville, NC

Chris:

*The fillers were argent silver, Ditzler (PPG) DX-8555, R-M 168Y13 / BAY-4S2.*

*Code 624 was just springs F/R, shocks were a separate option (638).*

### COLOR ME BUSTED

Richard, I have heard rumors that there were more high-impact colors planned for the early '70s. What light can you shed on this?

— Marvin Gold, Brooklyn, NY

Marv:

*This story has been circulating for years, and, while I have*

*zero proof, it sounds believable. Anyway, it is pure fun, so here's the list:*

- Well Red
- Catch Me Copper
- Unforeseeable Fuchsia
- Frank Lloyd White
- Statutory Grape
- Gang Green
- Cost Of Living Rose
- Hi-Ho Silver

*And a really great one that had zero chance of seeing the light of day, my personal favorite: Fisher Body Rust*

### ON A SLANT

Rick, In the late sixties and seventies I had several Darts/Valiants with slant-sixes. A '70 Dart gave up its engine after five years or so of hard use. A local junkyard had one on the ground, the whole thing painted yellow. The junkman told me that it was an industrial engine, perhaps out of a fork lift. He said it had a forged crank and rods. I ran that engine for fifteen years without a problem. Are you familiar with such an engine?

Is it true about the forged crank and rods?

—Tom Turner. Marshfield, VT

Tom:

*All pickup truck slant-sixes from mid-'63 thru '69 were painted yellow.*

*All slant sixes— all — had drop-forged con rods. These aren't Pontiacs!*

*All slant-sixes thru mid-'76 had drop-forged steel crankshafts. All. I can still hear the hammer drop in my sleep.*

### PRIMER ON PRIMER

Richard, Did all Mopars get primed the same color, regardless of final paint color?

— Tim Lawrence, San Diego, CA

Tim:

*Short answer: Yes.*

*Expanded answer: Yes, but the actual shade of the primer used varied quite a bit depending on the vendor, year, plant, etc. It was always grey, sometimes quite light (with a hint of green in some cases), sometimes almost charcoal, or anything in between. Some components, however (battery trays come to mind) we primed virtually jet black.*



*Even today, primer comes in varying shades. Mopars were usually some shade of grey, sometimes with a hint of green.*

### GUMBERS NURU

Mr. Ehrenberg, I am new to the Mopar scene, after a ride in my friend's father's '70 Charger I am hooked. Now I'm beginning to look for a Mopar to call mine, I am just not sure at this point what exactly I want, stock or modified.

Here is my question: If I go stock, what, exactly, is meant by "matching numbers"?

— Jay Bonesteel, San Diego, CA

Jay:

*Simple question, not so simple answer. There are, you might say, many shades of grey involved, it isn't black/white or yes/no.*

*At a minimum, a matching numbers car would have the VIN on the dash (post-'67) or A-pillar (earlier), this would match the VIN on the engine, transmission, rear axle, and fender-apron data plate, plus at least one additional location, either the cowl or the radiator top yoke. Even that simple-sounding explanation is as clear as mud in some cases however. Prior to '68, the VIN wasn't required to be anywhere except the VIN tag itself. There was an engine and tranny ID pad on '67-down, but these contained little more than date codes, and, in the case of trannys, part numbers. These earlier cars had the dealer order number (VON) on the data plate and the hidden locations, but only the broadcast sheet or info from the National Auto Theft Bureau can tie the two together. Luckily, '67-down build info is available (to proven owners only) from Chrysler Historical at <http://tinyurl.com/chrysleribm>.*

*Beyond these basics, it becomes a question of how "matching" do you want to get? 1970-up cars should*

*Please turn to page 96*



Starting in 1969, the Chrysler Corp. production car color palette virtually exploded. Some were extra-cost high-impact colors. Unfortunately, "Fisher Body Rust" was castrated down to "Burnt Tan Poly" (no doubt some lawyers had their say.)



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**I**t's hard to say how many '69 Charger sales were influenced by the popular TV series "The Dukes of Hazzard" that ran from 1978 to 1981. Even now, some 35 years after the last episode, General Lees still invade cars shows en masse and still please the crowd. At first blush, the Lees may all appear alike, but that wasn't the case for the Chargers used in the series. There were some interesting and significant differences between the

cars that you can see if you take the time viewing the videos and freeze-framing the images.

The Dukes series used up some 309 Chargers in all of which 17 originals survive today. They wear their original studio applied paint and remain in the condition they were left in on the Warner Bros. lot in California. One survivor used in the first series, Lee 32, now located in Richmond, Virginia, is a '68 Charger converted to look like a '69. It bears its original paint with

bends and crinkles in the sheetmetal from jumps. The first General Lee (Lee 1) was found in a junkyard and has been restored but is nothing like the original. As a matter of fact some of its original parts have been spread all over the globe. A guy in Canada has the roof bearing the original Confederate flag which was cut off and sold to him. Another guy in Australia owns the quarter panels, fenders and hood. A 4-Bbl intake purported to be from the car showed up on eBay. Lee 1 was sold to a big-time

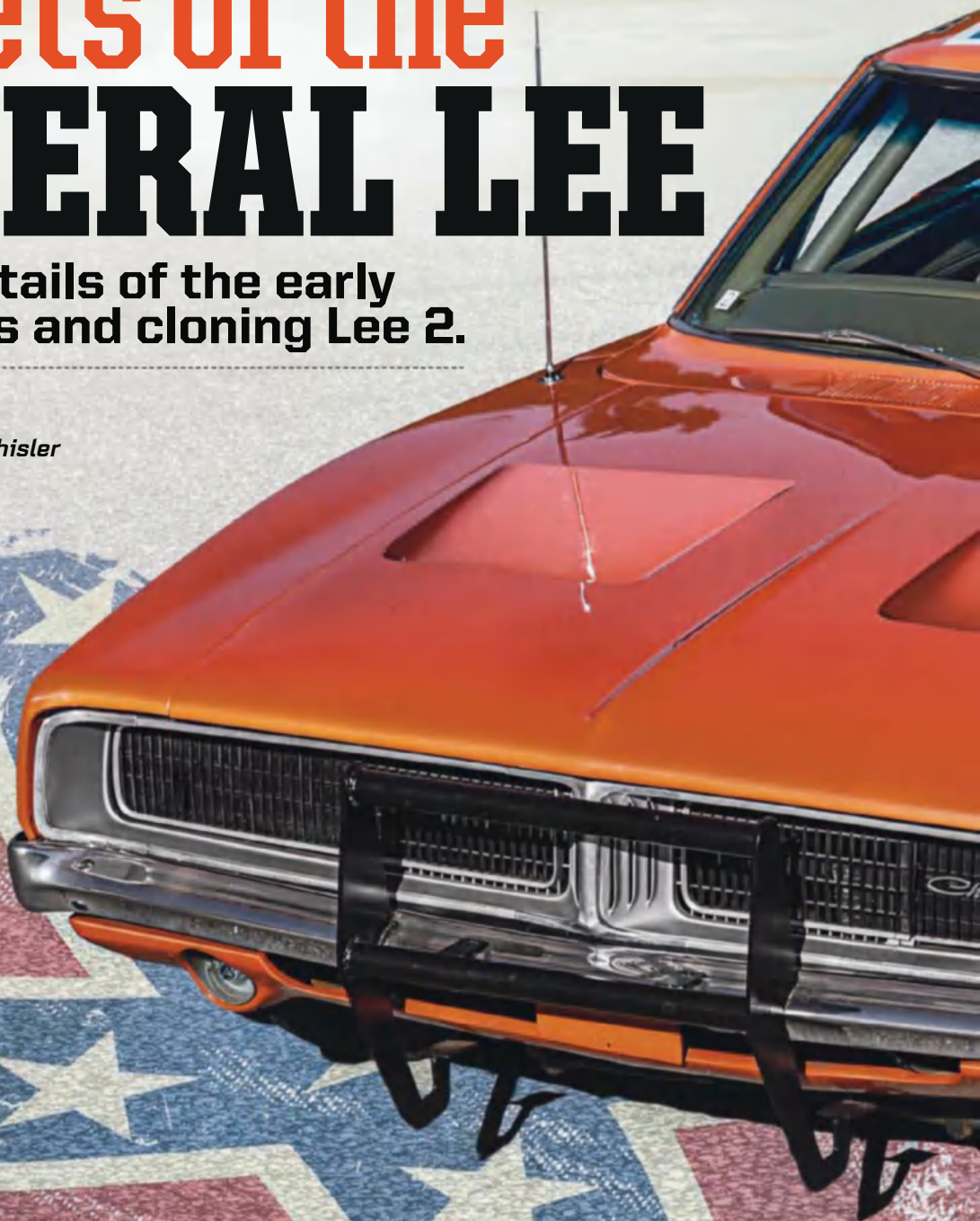
# Secrets of the GENERAL LEE

## Intimate details of the early General Lees and cloning Lee 2.

BY *Cliff Gromer*

PHOTOS BY *Cliff Gromer,*

*Henry Halman and Don Shisler*





golfer for big-time bucks. Because of his high profile and the need to be politically correct, he plans to have an American flag painted on the roof to replace the original Stars and Bars.

The Dukes of Hazzard series itself was a spinoff of the 1975 film, "Moonrunners." The Dukes initially started filming in Conyers and Covington Georgia with an allocation of three '69 Chargers painted Hemi orange. Two of them (Lee 1 and Lee 2) were shipped to Conyers, but only Lee

2 had full painted graphics (flag, lettering and door numbers). Lee 3 initially stayed behind in Calif. for promo shots. This car initially had no numbers on the doors as evident in the early photos with the Dukes. Only five episodes were shot in Conyers and Covington before production was shifted back to the Warner Bros. studio in California for the remainder of the first, and the subsequent seasons filming when the studio realized to their amazement that they had a hit on their hands.

## PAINT AND GRAPHICS

The three General Lees shipped to Conyers were maintained, or rather sustained (a big job considering the stunts the cars were subjected to) by the H&H Body Shop owned by Henry Holman. The shop specialized primarily in Corvettes. Don Schisler (picture car coordinator) did not like the way the Hemi Orange color appeared on film, so he asked Henry Holman to repaint it. So, after taping off the graphics he repainted the cars Corvette



Incredibly detailed to the original, this General Lee 2 clone owned by Dave and Mary Inglesby, started out as a Charger roller, and is based on the first Dukes of Hazzard episodes using video freeze-frame stills and behind the scenes photos. Lee 2's VIN tag is oversprayed saddle and next to it is a black sticker labelled LEE 2. (All references to "original" in this article should be taken to mean "as installed by the studio," not the factory.)



Push bar was built from scratch and was copied from numerous profile shots from stills taken from the original episode, as well as dimensional comparisons. The bar has the correct fog light mounting tabs as well as the flat pieces horizontal to the ground as the original did. Remember, they cut this bar off of a pickup truck in a junkyard. Lastly, the push bar is welded to the front bumper just as the original was.



Shack shelf item, now rare and expensive to buy. You never see the engine compartments of Lee 1 and 2. Lee 3 was the only one filmed with

which was turquoise, due to being A/C cars, not the 440HP and regular 383HP orange. General Lee Chargers in the later series were eventually all painted Hugger Orange (a Camaro color).

## THE JUMP

According to Craig Baxley, the stunt man who jumped the General Lees, (his cousin, Gary Baxley jumped the police cars), the first jump wasn't the one over Roscoe's police car, known as the Oxford College jump using Lee 1, but the jump known as the Elm Street jump, using Lee 2 in the first episode called "One Armed Bandits." The stunt guys were kind of bored, so Paul Baxley, (in charge of stunts) in a spur of the moment decision, told his nephew Craig to grab one of the Lees and launch a small jump in front of a feed and seed barn on Elm Street. The car Craig chose was one of the full roll cage cars known as Lee 2, and the rest is history. The damage wasn't too significant, and the word is that the Charger was repaired for further filming. Lee 1 and 2 were "second unit," or stunt cars identified by the number 2 on a white piece of tape in the lower right hand corner of the windshield. Lee 3 was designated as a close-up car, or "first unit"—a job also handled by Lee 1 and Lee 2 at Conyers before No. 3 arrived.

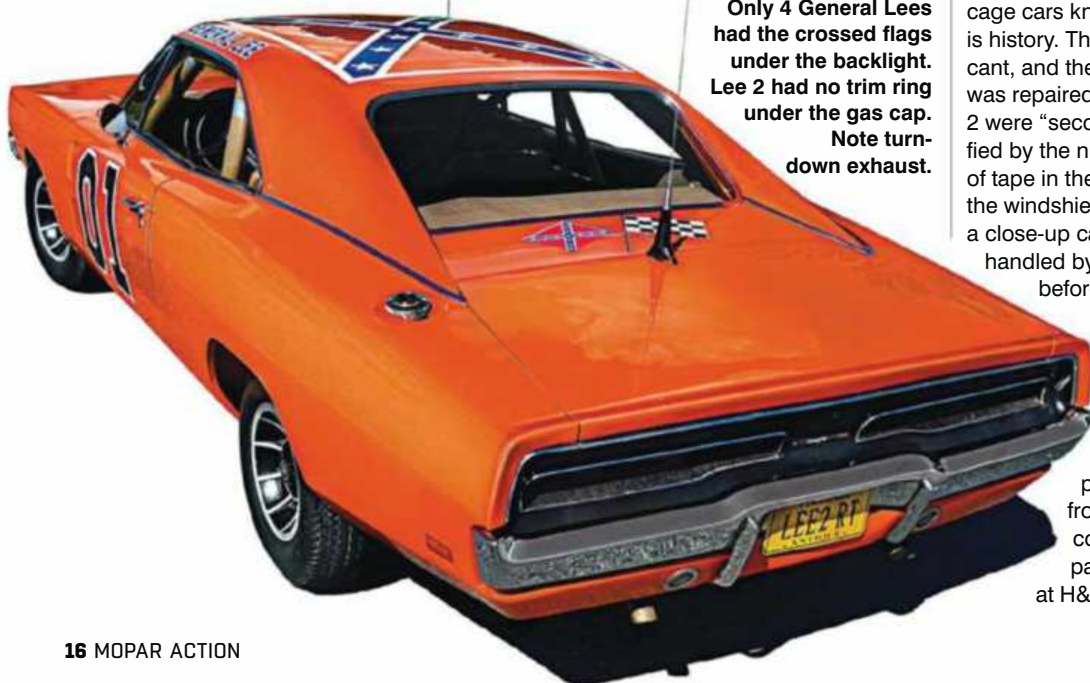
With only three main cars to work with and later one or two others (including a 1968 Charger converted to look like a 1969 by installing the grille and cut-out tail panel that had been removed from the jumped Lee 1, this converted 1968 was built and painted completely by the guys at H&H Body Shop) and a tight

its hood and decklid raised. The engine compartment was painted black while the underside of the hood and decklid were sprayed orange. Lees 2 and 3 had their interiors sprayed saddle tan. Lee 2 had come with a black interior that was resprayed saddle, but the steering wheel was left black. The dash was masked off but you can see a small strip of black near the windshield in Lee 2 where the paint didn't hit. Lee 3 was a real R/T and had a wood grained wheel and the usual R/T goodies. Lee 1 was 383 SE with the chrome strip along the bottom. Both 1 and 2 were powered by the 383HP engine

Orange Flame. Lee 1 and Lee 2 were sent across the street to a race shop, Baird and Trivette, for full roll cages. Other than later stunt cars, they were the only cars seen in the series that had them. Lee 3 was fitted with a single rollbar. In the later series when they were jumping so many cars, the studio came up with a removable rollbar that was transferred from car to car. You can often see the bar wobble slightly when the car comes to a stop.

Lee 1, 2 and 3 and another Lee built at H&H, were the only cars with the crossed flag decals under the backlight. The rear "teardrop" CB antenna was a Radio

**Only 4 General Lees had the crossed flags under the backlight. Lee 2 had no trim ring under the gas cap. Note turn-down exhaust.**







filming schedule, H&H usually had to work all night patching up the cars once they started stunts for the next day's shooting. It was simply "get it done," rather than "get it done nice." Remember, this was back in the day when car stunts were real, not computer generated like they are today, and TV was still "blur" resolution. Lee 1

and 2 were pieced together several times before the insurance company threatened to drop their coverage because of the liability risk to the drivers and actors. As a result, the only car that made it back to California to carry on the series was Lee 3 which, as a close-up car, led a comparatively easy life.

**Lee 2 on the way to the Elm St. jump. Notice the raised front ride height as the torsion bars are cranked up all the way, and the jump sequence itself.**

Jump cars were fitted with rear helper springs to firm up the suspension in the jumps. The original Lee 1 had concrete in the lower part of the trunk to keep the car from nosing over in the air on the longer jumps. Other jumpers probably had the concrete but this hasn't been verified. Lee 2 had a low front/high rear rake because of the helper springs, but the front torsion bars were cranked up for a jump. You can see the raised front end and different rake in the Charger as it's going down the road about to jump.



OK Dukes fans, how many of you picked up this scene in Episode 1: A brief view through Lee 2's windshield shows a second General Lee (either 1 or 3) parked by the curb. A mistake or maybe an inside joke.

Window slides started as an ad lib that went over so well it became a regular feature. John Schneider and Tom Wopat each developed their own technique. The doors were never welded shut. Stars and Bars on Lee 2 is identical to Lee 1's flag with the exception of the stars pointing toward the passenger side on Lee 2, whereas the stars point toward the driver's side on Lee 1.



## WINDOW SLIDING

In the beginning of the first episode where the Dukes are chasing Cooter in the police car, just before Cooter flips the cop car, the Dukes wipe out a bunch of mailboxes on the passenger side (the guy standing by the mailboxes is the director, Paul Baxley). When the Charger came to a stop the door handle was broken off so it couldn't be opened from the outside, so to get in for the next scene, Tom Wopat just jumped through the window. Producer Rod Amato was present and liked the move. He told John Schneider to do the same thing, and the window slide was born and each of the boys developed their own window slide technique. The General





The right side of Dave's Charger duplicates the movie car's rake and shows subtle differences in graphics compared to the left side



**ABOVE LEFT TO RIGHT:**

Dave used freeze frame interior shots to exactly duplicate the padded roll-bar, including the silver duct tape and the exact angle and mounting points of the rear tubes.



**ABOVE LEFT:** As per original, wheels are the correct deep dish 14x7 "Shelby" style American Racing wheels with Shelby caps and the correct unique lugnuts.

**ABOVE:** Lee 2 originally came with a black interior that was resprayed saddle tan but the wheel was left black. Since there were no shots of the gauges, Dave left his stock, but added special "shinbuster" oil and temp gauges.



The Charger retains the factory telescoping radio antenna and the grille bears the Charger chrome script and arrow emblems as most other Lees eliminated these.



**RIGHT:** Dave duplicated the white tape with the number “2” on the lower right corner of the windshield.

**FAR RIGHT:** Lee 2 had the hood-mount turn signals painted over.



Lee was supposed to be a racecar which would have had the doors welded shut but no General Lee ever had the doors welded shut.

### CLONING LEE 2


Dave Inglesby was in high school when the Dukes series debuted on TV. He noticed differences between the 3 General Lees, and the one that captivated him had a full roll cage and no chrome strip along the bottom, a solid orange Charger—Lee 2. Dave eventually bought 4 '69 Chargers. One he found sitting in the yard of Gary Lee Williams, Jr., aka “Bubba” Williams—a noted General Lee guru who owns one of the most accurate replicas of Lee 1. The two struck up a friendship. The original

Lee 1 had tuned up in a junkyard, but it wore the remnants of its green repaint as used in Episode 4, “Repo Men.” When the buyer started stripping it down and sanding the roof, what appeared were the Stars and Bars and orange paint. Bubba Williams was given access to the car at one of its displays, and he was able to document all the dimensions and characteristics of the flag and graphics.


Interestingly, the flags are identical in size on Lee 1 and 2 but the stars point in different directions. Lee 1's stars point toward the driver's door, while Lee 2's point toward the passenger door. The flag on Lee 3 is slightly smaller than the other two.


Setting the wheels in motion for the car of his dreams—an exact clone of the

Lee 2 Charger, Dave, with the invaluable assistance of Bubba Williams, did as much research as he could, viewing and reviewing the first series of the show and freeze-framing the shots to study details. A big break came when Bubba and another friend Jon Holland, were able to contact Don Shisler and Henry Holman who handled the Chargers in Conyers, Georgia. They supplied never before seen behind the scenes photos from their personal archives that revealed additional details on the first three Lees. The photos were Polaroids—not the best quality. The height of the “General Lee” lettering is the same on the two cars, but there are differences in the spacing between the letters and how the words “General” and



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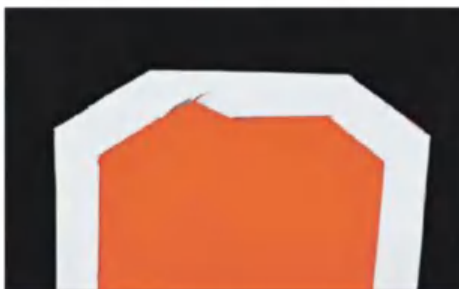


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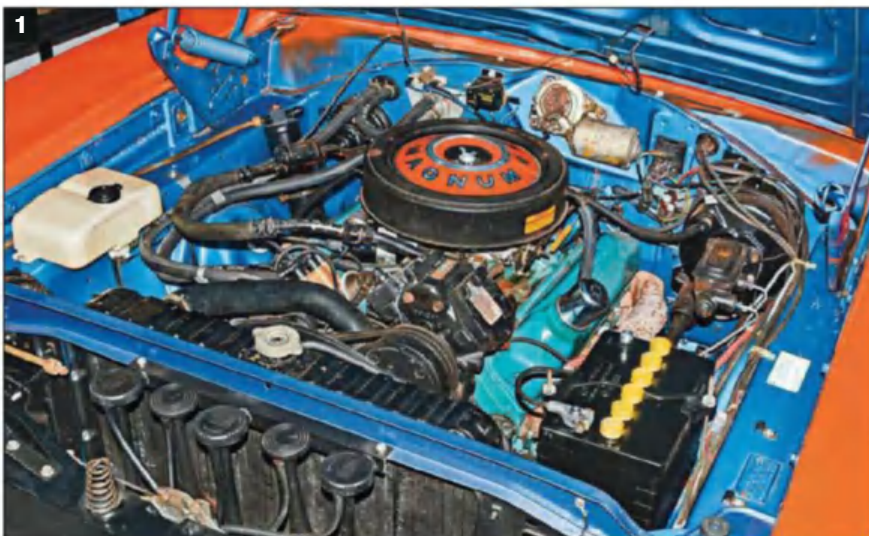
One of the most eye catching points of Lee 2 is the driver door numbers. Interestingly enough, they follow the upper door body line from the scallop, which might make sense to use this line when you are in a hurry, but from a distance the numbers will look crooked. This was done by the studio in California and was not changed when the car was repainted in Georgia. If you look close, one of the replicated flaws is a little divit on the inside top of the "0" on the driver's door, this might have occurred during a hasty masking job on the repaint. Dave's Charger is faithful to the original.



"Lee" stretched out. There are also differences between placement of the graphics between the right and left sides of Lee 2. Viewing the series videos and blowing up stills and the behind the scene photos from different angles gave Dave the starting point for the graphics to within 1/4-1/2" of the exact original locations.

Dave's Lee 2 clone started with an F8 Green Charger R/T body (a roller) that Bubba had obtained from a local kid. The body had some issues, so Dave went with new AMD sheetmetal. Initially, he painted the Charger Hemi Orange as that's the way they came from California. Dave wanted to be as authentic as possible, so taking the next step of what they did in Conyers, Dave and Bubba taped off the numbers, letters and flag, carefully duplicating the rush job flaws, and resprayed the Charger Corvette Orange Flame, but leaving the door jams and decklid underside Hemi Orange. One of the photos from Henry Holman shows Lee 2's hood open, and it's a mess with overspray all over the place. Dave took a more conservative approach in painting his engine bay, going with the original Lee 2's B5 Blue with Hemi Orange overspray along the edges.

California sent the first three Chargers to Conyers as stock, and Dave strived for a correct restoration including date-coded parts except, of course, for the General Lee mods. In the later series, the Chargers received new transmissions and carbs. Dave's roller came with a 3.23 SG 8 3/4"



**1-3:** Lee 2 was apparently a 383HP car with air conditioning, so as can be clearly seen in the original Conyers photos, the engine was turquoise rather than 383 orange. This is a relatively unrealized fact, that 383HP cars with air were turquoise (denoting the mild cam) rather than orange. Interesting also is the fact that the original Lee 2 had a "440 Commando" pie plate on top of the unsilenced air cleaner. Since the car came from California, it may originally have had the dual snorkel silenced air cleaner. It is possible that H&H may have taken the air cleaner off of the R/T car—Lee 3, and put it on Lee 2. Lee 3 may then have received the chrome air cleaner it sports in later episodes. The underside of the hood was also studied in the Conyers pictures and appears to be B5 Blue. Although it is heavily oversprayed with primer and orange paint, the B5 Blue was utilized for the engine compartment and trunk, although only the edges were oversprayed with Corvette Orange Flame to partially replicate the effect. Being a 383HP car, the tailpipes were turn-downs and did not have the R/T chrome exhaust tips.





**Note the nose-down, high-rear rake (similar to an AAR 'Cuda) and the rear helper spring (replicated on Dave's Charger). Henry Holman is behind the wheel.**

rear. The 727 came out of his '69 Dodge Polara, while the 383HP was a friend's who had modified it for racing but never ran it. Dave uses the same cherry bomb type mufflers with turn-downs as the original Lee 2 sported. The car has the same

"crack" in the exhaust sound, as he discovered when his southern, also car-loving wife Mary, jumped on it one day leaving the driveway. Dave rolls on the correct 14x7-in. "Shelby" style American Racing rims that have the unique deep dish look. American Racing made multiple 14x7 Vectors, of which only one is correct for these first cars. The Georgia cars all used 14x7 rims. The caps have replica Carroll Shelby stickers on them as the originals did. Even the lugnuts are unique. Rubber is the correct Polyglas. Later cars used radials.

A donor car coughed up its black interior, and Frank Badalson of American Performance Restorations helped source original parts including the air cleaner, valve covers, and numerous correct fasteners and decals. Dave's wife spotted the console at Chryslers at Carlisle. Legendary supplied the seat covers. Dave sprayed everything saddle tan. Lee 2 had headrests but Lee 1 did not. There were no shots of the gauges so Dave left them stock. The VIN tag was also oversprayed with saddle tan on Lee 2, where Lee 1 and 3's was left black. Next to the VIN tags of the three cars was a piece of

black plastic label which said either 'LEE 1', 'LEE 2' OR 'LEE 3' respectively. Studying freeze frames and photos, you can see differences in the roll cages between Lee 1 and 2 notably in the angle of the front right tubes going down from the main hoop. There were also remnants of the roll cage in the original Lee 1 rescued from the junkyard so you can see the mounting points and the size of the pads and panels that the tubes were welded to. Dave was able to duplicate Lee 2's cage (with heavy gauge exhaust pipe) along with the padding (oversprayed saddle) and the silver reinforcing duct tape that are visible in the video. The fourth episode featured a lot of interior shots where the car had been repainted green as a racecar, so it proved to be a great reference for further roll cage details. Lee 2 had no backseat.

The push bar and Dixie horn were not planned in advance. The story Bubba got from Shisler and Holman is that they saw a pickup truck in a junkyard with the push bar, so they cut it off and used it. Dave's bar is scratch-built and is true to the original. The "Dixie" horn was obtained when the film crew heard a guy on the

road hit the horn, they knew that it would be perfect for General Lee, so they turned around and chased the guy down, buying it from him right there on the side of the road. The horns didn't always "Dixie" the way they should have and you can hear some glitches in the first episode. Later on, the studio had a trumpet toot the riff and they just dubbed it in whenever it was required.

Probably the most cloned version of the General Lee is the last close-up car that was used in the last episodes now owned by Wayne Wooten, founder of the Charger R/T Registry. Wayne had been in contact with Warner Brothers Studios in an attempt to obtain some real General Lee parts for him and his club members. But after gaining the studios confidence he wound up obtaining the last existing original General Lees. Each of his club members had the opportunity to get one of these jewels in various condition for a ridiculously low price, and a signed agreement not to use the cars in any commercial venue. Unbeknownst to Wayne, the studio had set aside the last close-up car especially for him. What a prize. 'Course every owner's General Lee is a special prize to him, or her. 🍷



**Lee 2, masked off, being repainted Corvette Orange Flame at the H&H Body Shop.**

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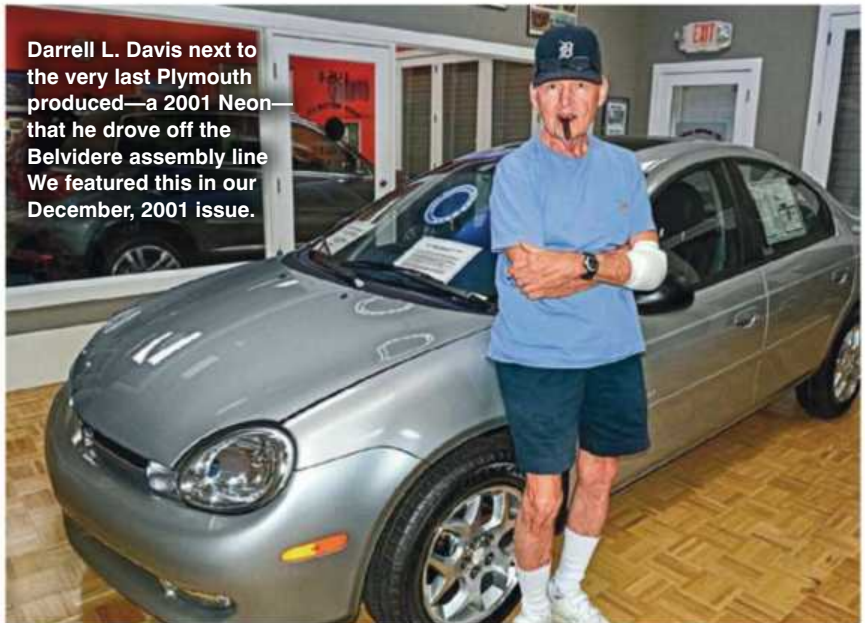
**Retired Chrysler exec sets out to document every Chrysler performance car from 1955 through 1967—and does the unthinkable.**

*Story & Photos By Cliff Gromer*

**D**arrell Davis isn't a household-name in the Mopar hobby as, say Ronnie Sox, Dick Landy or Tom Hoover. Maybe it should be, as what this Mopar man accomplished positively boggles the mind. First some background on the (unlit) cigar chomping Darrell who says he was chomping on stogies before Landy pulled his first one out of the wrapper. An eclectic collector, Darrell has amassed a variety of cool stuff. He started collecting 1/24-scale diecast car models in 1986 when The Franklin Mint first offered the solicitation of the Rolls-Royce Silver Ghost. Since then he has assembled some 1600 of these little gems from the 10 better quality manufacturers. As a kid, Darrell had a fat tire/tank Monark bicycle. Must've left a strong impression as he now has some 14 '40s and '50s mostly Schwinn and Monark bikes in pristine condition. 'Course, his main focus is cars. Over the years, Darrell has owned some 150+ automobiles including two 1970 Hemicuda convertibles at the same time—an orange one shown in the auction poster here, and the black one that came from Carlos Monteverdi in England. He says he sold both "cheap." He also owned two 1931 Imperials that won First in Class at the Pebble Beach Concours in 2000 and 2003. Both were sold long ago. Darrell's current stable includes two very significant Corvettes, 2 1963 Plymouth Max Wedges featured here and bookend Plymouths—one of the very first produced and the very last one produced by the factory (see sidebar).

A DaimlerChrysler Sr. Vice President, Darrell spent 36 years at Chrysler before retiring at the end of 2001. He started out as a service district manager and worked his way up the ladder landing positions as Zone Manager, Regional Manager, National Distribution Manager, General Manager of Import and Export Operations, General Sales Manager and President of Alfa Romeo Distributors of North America—a joint venture with Fiat that was hoped would lead to further discussions between Fiat and Chrysler under Chairman Lee Iacocca.

Darrell L. Davis next to the very last Plymouth produced—a 2001 Neon—that he drove off the Belvidere assembly line. We featured this in our December, 2001 issue.



**LEFT:** Part of Darrell's collection of Mopars in his assemblage of some 1600 better quality 1/24-scale model cars.

**BELOW:** Darrell's amazing collection of memorabilia includes this Pentastar flag that flew over Chrysler headquarters. The flag came down when Daimler "bought" Chrysler.

**“Darrell's automotive journey didn't always require a suit and tie. Back in the '60s he was pretty heavily involved in drag racing.”**





He later was President of Chrysler Europe, President of Chrysler Financial and Chairman of Chrysler Financial, and VP Chrysler Corporation. After the "merger" with Daimler Benz he was appointed Sr. Vice President of Service and Parts.

Darrell's automotive journey didn't always require a suit and tie. Back in the '60s he was pretty heavily involved in drag racing. From '67-'72 he worked part time for NHRA as Division Technical Director of Division II. Buster Couch was the DD and he was the DTD. Darrell worked along with Greg Xakelis and Marty Barrett to handle all the tech on the SS and stock classes at the major meets. He also wheeled his '62 Dart 440 9-passenger wagon powered by a 343 hp 383-inch wedge/TorqueFlite to the NHRA G/SA National MPH Record in April '69 at the Phoenix City meet. NHRA would not let him drive the car and made his teammates tear down the car and another tech group certify the record. The first night the car ran in Jacksonville it posted a 12.65 on a 13.08 record.

After Darrell retired from Chrysler, his life took a new direction — one he hadn't planned on. In about 2004, he went to a couple of car auctions. He spotted a '63 Plymouth Max Wedge and walked over for a closer look. Darrell knew these cars because he owned them so he knew what to look for. Darrell looked at the fender tag and asked the owner what documentation he had to show that the car was a real Maxie. The guy produced a photo of the production record (punch card). The first four numbers of the serial number (3335) indicated that the car was built at the LA plant. Darrell knew all Max Wedges were built at Lynch Rd. When he pointed that out to the owner, the guy said, "Oh no, my uncle worked at LA and they built one." Darrell replied that he found that hard to believe because there were so many unique components that would have had to been shipped there just to build one car, and that would have disrupted production. He also, during his career at Chrysler, served as manager of distribution and scheduling for the company so knew how the system worked.

Darrell asked to see the build record and realized that someone had cleverly camouflaged the record and put the correct punch in the engine column (you have to look at the columns not what's in the header). But it had a 1 in the transmission column indicating a 3-speed Chrysler built trans instead of a 6 which would have been the correct 3-speed Borg Warner T-85 for this car. Also, the card showed a

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## TO THE MAX

**D**arrell currently owns two Max Wedge cars. This black '63 Plymouth Sport Fury 2-dr. hardtop was built in December, 1962—a car identical to one he had previously owned (which was built within one week of this one) except that the previous Plymouth was a 383. This car has the T-85 heavy duty 3-speed as no 4-speeds were available in '63 Maxies. Oddly, the 4-speed (Warner T-10) could be had in 318, 361 and 383s, but it couldn't stand up to the Max Wedge's torque. This Plymouth originally came from Haywood, California, so the body was in good shape. It previously belong to Frank Spittle and had been restored by Musclemar Restorations. Darrell traded a '66 Hemi Satellite for the car and then had it re-restored by Curt Austin who had established



his reputation restoring '57 Chevys. The Plymouth, finished in 2007, won the AACA Grand National award in 2008. Darrell has owned the car for nearly 20 years. Clearly, the fender skirts are not OEM.

The white '63 Sport Fury convertible with a 3-speed came from Billy Cox Motor Co. in Tulsa, Oklahoma, and belonged to a guy in the army who ended up at Ft. Lewis in

Washington. The car had won OE Gold at the Mopar Nats after restoration by Bob Matthews in Seattle, and had gone through the hands of one other collector. Darrell found out from Galen Govier that the Plymouth was for sale and flew to Seattle to look at it. The price was too high so Darrell passed. He called the guy a year later and made the owner an offer which was accepted. Darrell detailed the car top and bottom, installed a new top and his signature skirts. It has been shown twice and now has Junior and Senior AACA awards.



**A bit of Max Wedge trivia:** Chrysler never used the terminology "Max Wedge" or "Stage I II or III." Plymouth called them Super Stock, Super Stock II and Super Stock III. Dodge called them Ramcharger, Ramcharger A, then II, etc. Max Wedge and Stage I, II and III are terms that have worked their way into the description of these cars over the years (mostly by the media). You can see more of Darrell's collection on our website.





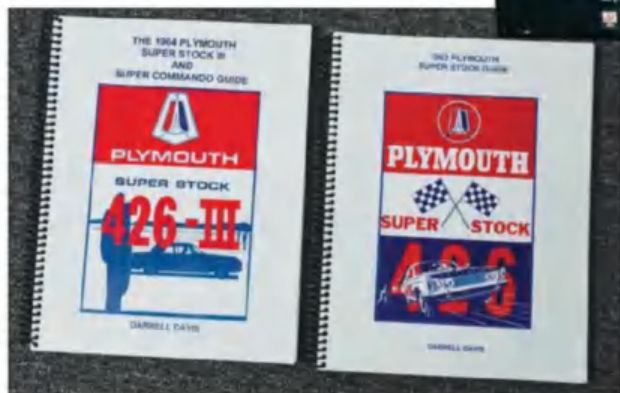
punch for "20" in the tire column indicating a 7.00-14 instead of a "30" or "23" for the correct 7.50-15. The car was a fake. Darrell had Chrysler Historical pull their record on the car's serial no. and it came up 318 Poly!

Another time at a Charlotte Auto Fair he came across a '60 383 Ram Induction 2-dr. Plymouth. Darrell had a soft spot for these cars as he had drag raced them before the Max Wedges came out. Those '60 Plymouths ran well and could dust those pesky 409 Chevys and 421 Pontiacs if set up right. The first thing he looked for was the bolt-in inner fender panels. The factory installed the engine from the bottom, and they had to cut the inner fenders for those



**ABOVE:** One of two 1970 Hemicuda convertibles that Darrell had owned was featured on this classic car auction poster.

**LEFT:** Two of 16 titles that Darrell has produced.



big ram tubes to clear. Plates were then bolted in to cover the holes. Those special inner fender panels and covers weren't available through parts—just the screws that secured the covers. If you damaged the inner fender panel you got a regular inner fender panel as a replacement. This Plymouth had the bolt-in plates and Darrell was ready to deal. But first he checked the VIN through Chrysler Historical. The car came up as a 318 automatic—another of a number of fakes that Darrell has uncovered over the years. At that point, Darrell realized that someone needed to do the research to protect the cars and buyers from the made-up counterfeit cars that were out there.

That's when Darrell embarked on his mission. Originally, he was going to document all of Chrysler's high performance cars from 1955 through 1967 where the records end. He managed to go through all the production records from 1960 through 1965 before he had to stop due to a family illness. What this entailed was scrolling through 16mm microfiche at Chrysler Historical, reading each card and then manually transferring the info on the HP V8s into an Excel program on his laptop. He started looking at the header on the cards to try and isolate the engine data, but that wasn't always shown, so he had to look at the

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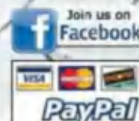
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# BOOKEND PLYMOUTHS



## FIRST: 1928 MODEL Q

Essentially a warmed-over Maxwell, this 4-door may not *the* first, but it's one of the first series that were built for only five months at Highland Park before Chrysler moved production to the new Lynch Road plant built especially to build Plymouths

that opened in early 1929. At this time, the current model became the "U". Walter P. might have been nervous introducing a new nameplate, so the radiator shell badge on Model Qs say "Chrysler Plymouth" to establish brand recognition. An interesting anecdote concerns Walter P.

Chrysler driving the first Plymouth across town to show Henry Ford. Ol' Henry looked it over and predicted Chrysler would go broke offering such a car with so many features (such as hydraulic brakes) at such a low price. They did, but it would take 80-plus years.

## THE LAST: 2001 NEON

Darrell knew in 2000 that the factory was going to quit making Plymouths. When DaimlerChrysler announced the end of the road for Plymouth, Darrell wanted the last one. He figured it would be a Prowler, but didn't care what it was. He called Executive VP of Sales and Marketing, Ted Cunningham, and got his OK, and then went to Jim Holden, President of DaimlerChrysler and put in his

request. Holden always joked that Darrell was president of the 1954 Plymouth Owner's Club—an organization with so few members, that Darrell would write the club's newsletter and essentially mail it to himself. Darrell owned four '54 Belvederes, one of each

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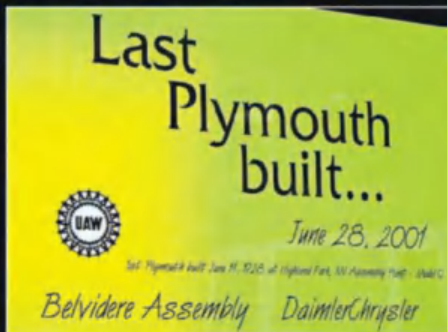
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body style and one of each color since there were only four standard colors and all four were AACA Grand National Senior winners and Plymouth Club Grand National winners. He is the Plymouth Club technical advisor for the 1954 and 1963 Plymouth models. Holden said OK.

The factory was building Chrysler (export), Plymouth, and Dodge Neons at the same plant with the only difference being the nameplate and the grilles. Darrell ordered his Plymouth Neon with every option he could get except automatic transmission. He said the seals would shrink over time and the trans would leak. No such problem on the 5-speeds. Darrell flew to the Belvidere plant on his own nickel and drove his 2001 Neon off the assembly line. He had it shipped to a dealer in Daytona Beach Florida with instructions not to prep the car except for checking fluid levels. The car came from the factory with 20 miles on the clock. It now shows 65 miles. Note the safety glasses in the trunk that Darrell was required to wear when he drove the Neon off the line and all the material that is shipped with the car to the dealer.



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**A Chrysler company man to the core, Darrell displays the official corporation photos of every Chrysler CEO from Walter P. Chrysler to Bob "Sellout" Eaton.**

punches in the individual columns. Darrell went through all the V8 models Chrysler made for six years, including taxis and fleets. There was no way to pre-sort the records which are on film. You scroll them one by one.

Darrell started this massive project in the 1990s when he lived in Detroit. He continued his quest when he moved to Florida. From 2005-2008 he'd get on a plane from Florida Sunday night and be at Chrysler Historical at 6 a.m. when they opened the door. Historical was located in the trim plant in the only building Chrysler (now FCA) has in the Highland Park complex, corner of Davidson and Chrysler Freeway. Darrell brought in a half-dozen Diet Pepsis, three cigars and two snacks and worked non-stop until 8 p.m.—14-hour days, eating lunch while he worked and stopping only

to go to the bathroom. At 8 p.m. he'd lock the place up, set the alarm codes and have Plant Protection let him out. You needed a gun to go into that neighborhood because it was so dangerous, but he didn't have one. His research involved looking at about a *million* records. And then looking at them again ... *and again* (!) to check himself and find cars he might have missed—a total of about 2000 hours. He's published 16 books with production data, dealer letters, public announcements, service bulletins, coding guides, etc.

Darrell isn't in it for the money. He doesn't even have a website that offers his books. You can find them on noted Max Wedge and Hemi authority Greg Lane's website [www.racehemi-maxwedge.com](http://www.racehemi-maxwedge.com). Each trip to Detroit cost Darrell about \$1200-1300, so he figures with the books he's already sold, he's in the hole for about 8 grand. He has also done a lot of pro bono research for some of his book buyers. His main concern is protecting "real" cars and exposing the fakes.

Darrell's books include 1960–1961 Dodge and Plymouth Ram Induction cars, '62-'64 Dodge and Plymouth Max Wedges and '64-'65 Dodge and Plymouth Race Hemis. The 16 books include the 12 model year guides, a Ram Induction summary, a Max Wedge summary, a Race Hemi summary and a serial number guide that is smaller and easier to carry. He's probably best known, though, for his research on Max Wedge cars. There are a lot of fakes floating around out there. To find out if a Max Wedge is real, you can send the VIN and other documentation to Chrysler Historical (now called FCA Historical) and they can research the car for a fee of \$35-\$55. VINs can be faked as can engine numbers. The key to a Max Wedge's authenticity is Shipping Order or SO number that is stamped on the back of the package tray (convertibles had the number stamped on a panel down in the back) and the radiator support. The SO is 10 digits on the car, but 8 digits on the

— Continued on page 88

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WAITING FOR THE BATMOBILE DEPT.

# Practical JOKER

**When not fighting crimefighters, this insane Challenger is rounding up awards.**

STORY • Scott "instigator" Longman • PHOTOS • Charlie Lewis





Steel T/A scoop is mated to stock hood. Challenger has multi sponsors. Bryan plans to fit a windshield from a tour bus so he can list them all.



Originally black, Bryan pounded this '11 Challenger from Day One, turning mid 12s at the track, stock, with less than 500 miles on the clock.

W

e never could stand Batman. He had that goofy mask thing with the ears, the bad boots, all of it. Okay, he did have Batgirl and, at least for a while,

Catwoman, which were huge. But in the bigger picture, here was some middle-aged guy living in a cave and wearing tights. And worst of all, he drove a Ford.

So where does that leave us? Right. Rooting for one of the villains who were out to clean his clock. We always liked the Joker. No, we don't mean the unhinged, homicidal Jack Nicholson version. And we sure don't mean the so-psychotic-that-it-killed-the-actor Heath Ledger version. No, we're talking about the original Caesar Romero one, who was about as dangerous as Joe Biden after his second bottle of Nyquil. But still dangerous enough to drop a goofball Adam West.

Which brings us to Bryan "The Joker" Fuller. While some people treat the term "obsessive-compulsive disorder" as a pejorative, Bryan embraces it with truly open arms. "Yep. OCD. Anybody who knows me knows that's true. And it sure accounts for what I did with this car."



Bryan fell in love with the new Challenger before the first one hit the streets. When the 6.4L (392") SRT8 was announced, he smoked straight over to his Dodge dealer and was the second guy on the list for one. There ended up being some delays thanks to a tanking economy, but on Memorial Day, 2011, Bryan managed to glom onto one. His was black on black.

He knew from well before Day One that he was going to go over the top. He'd been a severe gearhead for decades, and all that did was help him gin up ideas. In his wildly misspent youth, he had a '70 Dart that he'd equipped

with a 360, and then later, a '69 Charger with a 383. After that was a whole fleet of Dodge half and three-quarter ton pickups, to which he gave RB-block injections. And more recently, Bryan had owned and modified a 300C, a 300 SRT and a Charger SRT8. The Charger, in particular, came in for mods.

Bryan has actually had several themes for this car. One of them involved his relationship with the female voice of his navigation system. Given that Bryan scares the hell out of us, we decided not to pursue any further questioning on that one. But the relevant theme here is, unsurprisingly, The Joker. Bryan found this shifter

and knew instantly that it was the perfect complement to his other outrageous visual plans. People ask him if there is another hidden Joker emblem someplace in the car. He responds: "The only other Joker is the driver."

So, what did he do with the rest of this ride?

Do you remember that in the Batman TV series, every time somebody hit somebody else, a big jagged sign would flash up reading something like "ka-blooey" or "ka-pow"? Well, one of the biggest "ka-pow" factors here was the paint. Given his OCD, Bryan had to pretty much disassemble the car to



Interior gets touches of the brilliant green treatment. Rare shifter handle originally came from Sing Sing prison in NY where it was used to throw the juice to the Chair. Now, when Bryan shifts, he laughs all the way to Reverse.



Challenger came from the factory in black. Bod was redone with a white base coat covered with PPG Sublime with hints of gold pearl and notes of oak and cherry. Badges were shaved and Fed Ex'd to Mel Brooks.



“As to the hardware, Bryan found the stock 392 Hemi to be sufficiently awesome that he didn't mess with it.”

paint it. Or at least take off the fenders, fascias, hood, trunk and doors. There followed enough surface preparation that the guys who set up the Hubble telescope stopped by for pointers. And upon time to prime, Bryan broke with Dodge's playbook: instead of using a medium-dark gray, he went with blinding white, on the theory that the final product would show the difference. Then he took PPG Sublime from the '07 Daytona. But of course he couldn't leave well enough alone there, either, and ended up ghosting in just a little of gold pearl. Over that white primer, the effect is immediate and electric. Of course, the stock badging ("Badg-es? Badg-es? We don' need no steenkin' BADGES") were right off. Somehow in the complex neural net that is OCD, chrome was out. Like, right out. Like, never again out. Brian went after chrome like a sortie of A-10s after a column of ISIS trucks. In its stead, every badge was custom made, most in Sublime. The net effect is magnificent.

With the color properly decided upon, he turned his attention to the sheetmetal itself. He wanted a scoop like a '70 T/A so he bought one of those hoods, but he never would have considered slapping fiberglass onto the car, which meant he then had to fab a new scoop out of steel. That took, like, 43 tries. But when you are the OCD Joker, if try number 42 isn't hacking it, you go right to try number 43. 43 worked.

As you would expect, the stock ride height was completely unacceptable. So, one good maniacal cackle later, and Bryan had an airbag suspension setup that drops the ride so low that going over a penny at speed causes damage. Vi-Air both provided the necessary equipment and was so good as to spring for his sponsorship at SEMA. He runs around with one of their compressors in the trunk.

As to rolling stock, Bryan started with Foose wheels, but ultimately went to USW Forge to create a custom set with exactly the right offsets and other dimensions to fit under his rolled fat-lip fenders.

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The Aeromotive logo, featuring a stylized 'A' with a red arrow pointing upwards and to the right, above the word 'AEROMOTIVE' in a bold, sans-serif font.





Vi-Air air ride suspension gives Bryan a lift when he's feeling low. Car goes through 17 sets of rocker panels in a season.

The pictures pretty well tell the story. The rubber is from Toyo, T1R's, 255 30 22s up front and 295 25 22s at the other end. They also sponsored him at SEMA, and he's found their tires have distressing levels of traction, which is just the thing for putting a holedshot on the Batmobile.

As to the hardware, Bryan found the stock 392 Hemi to be sufficiently awesome that he didn't mess with it. He did add a Magnaflo exhaust, from high-flow cats to the back, to slightly decrease backpressure and add a little something to the aural note. To get the most out of that, he had Diablo Sport give him a custom tune. The probable horsepower number is north of 500, or at least we're going to say so. Likewise, it's a stock converter and 'Benz tranny. Of all the other hunks of metal, they are pretty much OEM, except he had to DX the original rotors in favor of R1 Concept ones, with lots of holes and runic writing or something. Plus, the OCD said that the stock caliper color was NOT acceptable. They are now a nice, gloss black, thank you.

The interior bears the same telltale marks of this insanity as the outside. First, Bryan shaved the headrests. When you are truly diagnosable, you don't care about your cervical spine. Then he pulled out all the original upholstery stitching. I mean, think about that. The sheer effort in pulling it out, let alone that they were gorgeous brand new seats is enough to cook your frontal lobe. And then he RESTITCHED them. We wouldn't know how to do that. Even if you showed us. And of course, it was in brilliant sublime green thread.

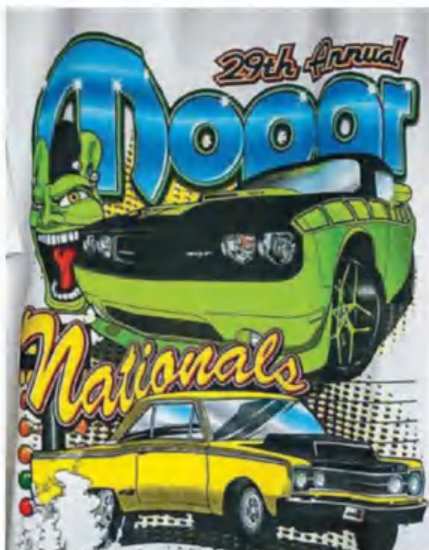
Well, to hell with what the Caped Crusader might think, a whole bunch of other good guys sat up and took notice of what The Joker was up to. And instead of trying to given him a concussion and throw him in prison, they started inviting him to events. Okay, so, to start, do you know where Spokane is? We didn't either. At the Nats this last years, we conducted a statistical sampling of the crowd, and found that the only people who know where Spokane is live there. Interestingly, however, only 88 percent of them say that they know. Anyway, Bryan has twice driven from Spokane to car shows in Los Angeles. No trailer queen here: he drove it and drove it hard, even if he did have to take two hours with cleaner and wax



**ABOVE:** Underhood isn't as wild as the exterior. Just some better breathing mods to boost the ponies to the 500 range. **BELOW:** Bryan recouped most of the mods cost by selling the headrests on eBay. He restitched the stock seats in green thread. Car wouldn't have been magazine-worthy without that.







Challenger was a Best of Show winner at the Mopar Nationals in Woodburn, Oregon—one of a container ship load of awards the car already has garnered. The following year, the Dodge was featured on the Nats event T-shirt.

from Mother's once he got there. Then there was the whole SEMA bit, referred to above. That was November 2012. Then he managed to get invited by Dodge, no less, to the Portland International Raceway in 2014. Dodge was doing some touchy-feely thing among hardcore Challenger owners, if that is not a metaphor already cataclysmically doomed to failure before it is printed. There was a Hellcat, and 25 guys like Bryan, all with their own take on the Challenger. Well, Bryan got himself known, and sometime after that was a massive Spring LX festival. It started with 100 cars, and is now well over 1,000. At this one, he won one of the top five slots of more than 1,200 cars. Then, just to say he did, he went to the Mopar Nats in Oregon (we didn't even know there WAS a Nats in Oregon), where he won Best of Show against vintage iron. The following year, his car appeared on the Nats' T-shirt. This is, in our universe, perhaps the single most outrageous honor that is possible to bestow. ALWAYS grab at least one extra T-shirt, because sure as hell you'll destroy the first one with hypoid gear lubricant within 12 hours of getting it.

So that is Bryan Fuller. What's he do now? He has a giant semi to hide the Challenger. The trailer is painted up like it's a food-service truck, Infinite Jest Kitchen Solutions, zero signature to the passerby. So he hangs out at big shows like SEMA. Just waiting for the moment that some poor slob shows up in a Batmobile. 🖤



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#48 James Hylton Dodge races #99 Paul Goldsmith Dodge during the August 1968 Western North Carolina 500 held at Asheville Weaverville Speedway



Don Hunter / Smyle Media

# THE RACE SEASON MARCHES ON

***Plymouth lowers its profile and Petty goes to Ford.***

**STORY BY WM. R. LADOW**

Photos By Don Hunter/Smyle Media

**A**s 1968 marched on, it became abundantly clear that the race season could only be described as organized chaos. Race teams crisscrossing the country every week to place themselves in a position to make money, doing something they loved and/or needed. It didn't matter what series, be it USAC, NASCAR, IMCA or ARCA, numerous race teams were on the road supporting countless drivers. In addition were the hundreds of short tracks across the USA that fielded entries every week. Those being cars constructed all through the decade and in the case of Nichols Engineering, some dated as far back as early 1960s Pontiacs or Dodges and Plymouths from as far back as 1963. These were the many customers of Nichols Engineering "Go-Fast Factory" of Griffith, Indiana. Whether it was technical support, parts or even completely-built racecars, Nichols' operation ran seven

days a week and, when in need, shipped parts out of its own airport just a mile up the road.

In the meantime, Nichols Engineering was constructing a brand new facility adjacent to the Charlotte Motor Speedway in North Carolina. Nichols also was in the process of adding another 20,000 square feet at the Griffith, Indiana facility as part of a request by Chrysler Corporation related to the new aero designs being discussed at corporate headquar-

ters. He and Goldsmith has also formed a construction company in North Carolina named MetroLina. Its first contract was to rebuild and reconfigure North Carolina Speedway in Rockingham. In addition to the Charlotte facility, Nichols and Goldsmith would open a series of "Performance and Safety Centers" both in Northwest Indiana and Charlotte North Carolina. Ray Nichols was also overseeing a myriad of other businesses from trucking companies to aircraft engine

Nichols Engineering Archives



The newly designed Nichols Engineering Dodge Charger 500 that Paul Goldsmith would pilot in 1969.



## THE STORY SO FAR...

- Part 1** Aug. 2013: GM bows out of NASCAR, opening the door for F.R. Householder, Chrysler's Manager—Circuit High Performance Competition, to sign on Nichols' Engineering, which formerly fielded race-winning Pontiacs, to become Chrysler's stock car builder.
- Part 2** Oct. 2013: Nichols debuts his 1963 Plymouths. Initial testing and competition prove out Nichols designs. USAC drops a bomb.
- Part 3** Dec. 2013: The Hemi debuts and sends shockwaves through the racing world.
- Part 4** Feb 2014: The Daytona Firecracker 400, NASCAR's bombshell and the end of an era.
- Part 5** April 2014: NASCAR bans the Hemi.
- Part 6** June 2014: Nichols keeps Chrysler in the game by running other circuits as NASCAR tries to lure Chrysler back.
- Part 7** Aug. 2014: 1966—Chrysler and NASCAR settle their differences, and Ray Nichols expands his operation with a new factory and new drivers.
- Part 8** Oct. 2014: Chrysler unveils the new Dodge Charger, surprises with the 405-cube Hemi and gets hit with exploding tires.
- Part 9** Dec. 2014: Chrysler continues its winning ways going into the Spring of '66 as NASCAR plays fast and loose with the rules.
- Part 10** Feb. 2015: Chrysler and Nichols chalk up host of national championships.
- Part 11** April 2015: Nichols expands his operation as Chrysler designates him as the sole source for Stock Car hardware.
- Part 12** June 2015: Nichols crew and equipment roll into the opening of the '67 race season and Daytona.
- Part 13** August 2015: Chrysler chalks up victories in the '67 USAC and NASCAR venues.)
- Part 15** December 2015: Facing 1968 pre-season challenges.
- Part 16** February: 2016 Ford lays down the gauntlet.
- Part 17** April 2016: Dodge waxes as Plymouth wanes.

rebuilding operations. The long hours and upheaval developing at Chrysler Corporation spread the entire Nichols staff so thin that many, including Ray Nichols, was on the verge of collapse.

In the case of Ray's close friend and colleague, Ronnie Householder, it had taken terrible toll on his health. A toll that would eventually change the way Householder managed his position at Chrysler. Additionally, making the 1968 Dodge Charger a

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A photograph of a white 1968 Ford Mustang race car, number 426 C.I., parked in a lot with other race cars. The car is viewed from a front-three-quarter angle, showing its distinctive front grille and hood. The number '426 C.I.' is printed in large black letters on the hood. The car is parked on a dark asphalt surface with yellow double lines. In the background, several other race cars are visible, including a red one and a blue one. A few people are standing near the cars in the distance.

covered racing in Stock Cars, IndyCars and Sports Cars (Ford GT40 Mk. I), while Chrysler maintained its primary focus in stock car and drag racing. The individual racing budgets reflected that, with FoMoCo investing substantially more than Chrysler. Ford Motor Company wasted no effort, no current operational racing costs and no lack of creativity when it came to investing in the future of auto racing. This commitment gained tremendous momentum in stock car racing with the newly design Ford and Mercury engines and chassis. Their success continued following the Firecracker 400 at Daytona as the NASCAR season looked ahead to another 24 races. USAC had the majority of their



schedule yet to be run, with 15 races to be held on 13 differing race dates.

As the second half of the race season ramped up, A.J. Foyt in a Jack Bowsher Torino won the July 14th Miller 200 at Milwaukee. On July 20th, Chrysler bounced back at Mosport with wins by Roger McCluskey in a Norm Nelson Plymouth and Al Unser in Rudy Hoerr Dodge. On July 21st, Paul Goldsmith finished 23rd at Bristol, with David Pearson the winner in a Holman-Moody Ford. Don White captured his third win of the season at Cincinnati on August 2nd. The month of August saw the results in NASCAR get no better. LeeRoy Yarbrough in a Junior Johnson Mercury won going away in the Dixie 500 at Atlanta on August 4th. Chrysler entries



The transition during May, from Plymouth to Dodge was no easy task for Goldsmith, who only 5 months before had been hospitalized following a brutal wreck at the Riverside, California Road course.

made a decent showing with Bobby Isaac finishing second and Richard Petty finishing fifth, but sandwiched in between were Donnie Allison and David Pearson in Fords. Goldsmith finished 21st, losing an engine. Jack Bowsher powered his Ford to a USAC win at Milwaukee on August 11th as Don White finished with a DNF after blowing an engine on lap 106. Three days later, Don White captured another USAC 150 mile race win at the "Mile." The rest of August found Norm Nelson's Plymouths holding their own against the Bowsher Fords. In NASCAR, David Pearson put on clinic in his Ford winning four of the next five races at the likes of Columbia Speedway, Bowman Gray Stadium, Asheville-Weaverville, Langley Field, and South Boston. Goldsmith led 41 laps in the Western North Carolina 500 at Asheville, only to end up with a DNF due to throttle problems.

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## → THE RACE SEASON MARCHES ON

Nichels Engineering's racing results were better in September as Paul Goldsmith finished fifth in the Southern 500 starting off the month with his best finish to date for the year. Don White captured two wins in USAC at DuQuoin and Milwaukee Mile. Chrysler Racing seemed to be making progress and Richard Petty, Bobby Isaac and Charlie Glotzbach combined to take victories in the next six of eight NASCAR races. Glotzbach won the National 500 at Charlotte Motor Speedway on October 20th to post his first Grand National victory. Glotzbach drove a Cotton Owens-wrenched Dodge in winning both the pole and the race in a space of 11 days due to the impending Hurricane Gladys. Goldsmith finished second in his Nichels Engineering Dodge. Don White won his seventh USAC race of the year on the same date at New Bre-



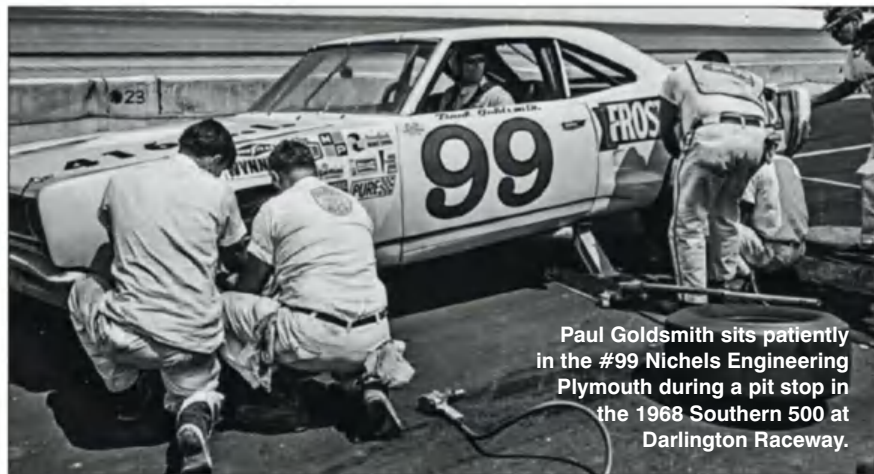
Ray Nichels (left)  
and Chrysler Boss  
Ronnie Householder.

men, Ohio. Both Goldsmith and White finished their 1968 season running in the NASCAR American 500 at the North Carolina Speedway in Rockingham. White posted a sixth place finish, with Goldsmith coming in 29th with a faulty ignition.

On the season, Paul Goldsmith ran a total of 15 races, leading over 300 laps. He finished with two top fives and 4 top tens, garnering a grand total of \$24,315 in winnings. Don White's season would be

terrific by anyone else's standards: third place in the season's final tally of 19 races run. White would win seven times, with 13 top fives, 4 pole positions and earning \$28,843. For a defending champion though, it was a let-down.

In NASCAR, the season champion was David Pearson, who piloted his Holman-Moody Ford to 16 wins and \$133,064 in winnings. Richard Petty, driving what



Paul Goldsmith sits patiently  
in the #99 Nichels Engineering  
Plymouth during a pit stop in  
the 1968 Southern 500 at  
Darlington Raceway.



#71 Bobby Isaac leads #37 Sam  
McQuagg during the 1968 World 600 at  
Charlotte Motor Speedway.



many considered a poorly designed Plymouth also captured 16 wins and grabbed winnings of \$99,534. The NAS-CAR points race came down to the wire with Pearson collecting 3,499 points and Bobby Isaac in the K&K Insurance Dodge Charger finishing a close second at 3,373.

A.J. Foyt driving a Jack Bowsher Ford won the USAC season point championship with Roger McCluskey (in a Norm Nelson Plymouth) with Nichols' Engineering's Don White finishing third. Norm Nelson's Plymouth team finished first in Owners points with Nichols Engineering finishing third.

As the other major race series wound down for 1968, in ARCA it would be Benny Parsons, a former Detroit, Michigan taxi driver who would capture the 1968 season championship driving a Ford. In IMCA, it was Ernie Derr in a Nichols Engineering Dodge who once again captured the season's championship.

## THE ONLY CONSTANT IS CHANGE

With the stock car race season over and teams beginning their planning for the 1969 season, a bombshell landed dead center in American Stock Car Racing.

Petty Engineering was leaving Plymouth, signing on with Ford Motor Company.

In late November, Richard Petty made the announcement that he longer would be a part of the Chrysler camp. There was much discussion about Petty wanting to convert to the Dodge Charger 500 for 1969, but the general consensus was that Chrysler forced Petty Engineering by demanding they continue to campaign Plymouths. For years it had been an accepted reality that Ford had made overtures to the Pettys, but none had come to fruition. Now under the astute guidance of Jacque Passino, the Ford brand was winning big and utilizing a huge racing budget. Couple that with the arrival of Semon Knudsen as the President of Ford Motor Company, and it became obvious that Petty Engineering was made an offer they couldn't refuse. There was more to the negotiations than just better competition opportunities for Petty Engineering, but those facts would take several months to surface.

In the meantime, Chrysler Corporation's way of doing business in auto racing, would forever be changed. As far as Nichols Engineering was concerned, in planning for the 1969 season, it was



**Dodge Chargers under assembly at the Nichols Engineering "Go-Fast Factory" in 1969.**

agreed that a healthy Paul Goldsmith would return to run the "money" races in NASCAR. Don White would run the entire USAC stock car season with an occasional ride in NASCAR. Joining Don White as a teammate in USAC, also driving for Nichols Engineering, would be a rookie. His name was Terry Nichols.

At the Nichols Engineering "Go-Fast Factory" in Griffith, the 24 hours per day, seven days a week schedule did not slow. Nichols was already constructing a fleet of Dodge Charger 500s to be ready by the Daytona 500 in February of 1969. In the meantime Nichols continued to prepare the new addition to the "Go-Fast Factory" as requested by the very highest levels of Chrysler management.

In 1969, Nichols Engineering would see Plymouth completely end its support in American stock car racing. Richard Petty

would be off to race for Ford Motor Company, with Lee Petty, behind the scenes, continuing to sell his son's racing skills to the highest bidder. Ronnie Householder's health would continue to decline and in a matter of four years, play a major role in Chrysler Corporation exiting American auto racing.

Even as the Nichols Engineering staff was constructing racecar after racecar in Indiana, there were meetings being held at Chrysler in Detroit discussing newly designed racecars with sloped noses and huge rear wings. Early testing results would force Dodge to once again redesign the Charger, only this time it would look like no other racecar ever constructed in America.

**Ed Note:** This is the final chapter in Bill LaDow's Nichols/Stock Car Series. 🏠

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# DRAGON SLAYER

**A quick simple DIY guide  
for mating a Viper to a Charger  
shell on your lunch break.**

*Story & Photos By Cliff Gromer*

**...and the fairy godmother  
waived her magic wand and the Charger  
and the Viper were united in a blinding  
flash and rolled off into the sunset for a  
lifetime of motoring bliss. THE END.**

So much for fairy tales. Reality has more Captain Hooks and dragons and crocodiles and Darth Vaders than you can shake a stick at. Just ask Mark Tuchmann. He thought his story would read something like this ...

Once upon a time, not long ago, in a land not far away, Mark Tuchmann set out to find his dream Charger which he found after slaying the dragon ... and he and his dream Charger lived happily ever after enjoying many thousands of happy motoring miles between them. THE END. NOT!

Here's what *really* happened, a sordid tale if there ever was one.

Once upon a time, 15 years ago to be exact, Mark Tuchmann decided he needed a classic car. OK, he didn't really *need* one, he just *wanted* one—a Charger, reasonably priced, that he and his boys could restore a bit and drive around his hometown then, Rocky Hill, Connecticut (now Hull, Mass.) Looking at Chargers on eBay, he spots a '69 Charger in Louisville, Kentucky that looks like it would fill the bill—a 318/727 SE stated to be in "good condition." The price is 12 grand—cash. Mark figures he'll drive down with a moving truck (he used to be in the moving business), load the car in with ramps, slay any dragons that got in his way, drive home and live happily ever after.



Mark loads his son (10 years old at the time) and his wife into the truck. There's still be plenty of room for the Charger. He drops his wife off to work in Milford Conn. and drives straight out to Louisville. Mark's wife flies out to Louisville after work and Mark picks her up at the airport. Then they all drive out to see the Charger. It looks good on a casual inspection and even runs good on a test drive. The seller's wife is crying and carrying on about how the Charger is part of the family and how can her husband let it go. 'Course the tears suddenly dry up when Mark produces 11 grand in cash (he had put a \$1000 deposit on the car). Problem is the car is too wide and won't fit into the truck. Score one for the dragon. Luckily, Mark has a Repair license plate (similar to a dealer or transporter plate) with him, so the plan is to have his wife drive the Charger while Mark and his son drive back in the moving truck to his bud's shop in Connecticut (scratch one dragon).

Mark's first clue that maybe this story isn't going to have a fairy tale ending is when the seller asks, "you're gonna *drive* the Charger all the way back to Connecticut?"

"No, my wife's gonna drive it. Why, is there a problem? When I talked to you on the phone, you said the Charger was in good shape and you were gonna tune it up and take care of anything it needed."

"No, no, no. I mean I just wouldn't drive it to Connecticut."

An hour and a half into the drive to their motel in Cincinnati, it starts to rain. Mark's wife hits the wipers. They work, but the blades are all dry rotted and they just smear. The rearview mirror is loose and just flops around. Otherwise the Charger seems OK—for now. Mark is following his wife in the truck and he seems to be smelling gas, but he doesn't think too much about it. They pull into a swanky hotel with valet parking. The valet guys think the car is pretty cool which makes Mark feel pretty good.

The next day, after a stop in Columbus, Ohio, Mark's wife hits the gas on a right hand turn and the pedal goes to the floor (dragon). She puts the trans in neutral and turns off the engine. Mark pulls up in the truck, goes over, starts the engine and everything is normal. So the trek back to Connecticut continues. They stop at a truck stop and get the wipers and mirror fixed. Mark is now in front in the truck, and they're going down a steep grade in Snow Shoe, Penn. when the Charger suddenly disappears in Mark's mirror. He pulls over, and eventually the Charger comes coasting down the hill with its flashers blinking. The car just dies (dragon). Mark gets a tow to a nearby gas station and makes a deal for them to flatbed the Charger to his bud's shop in Connecticut, and they all drive home in the truck.

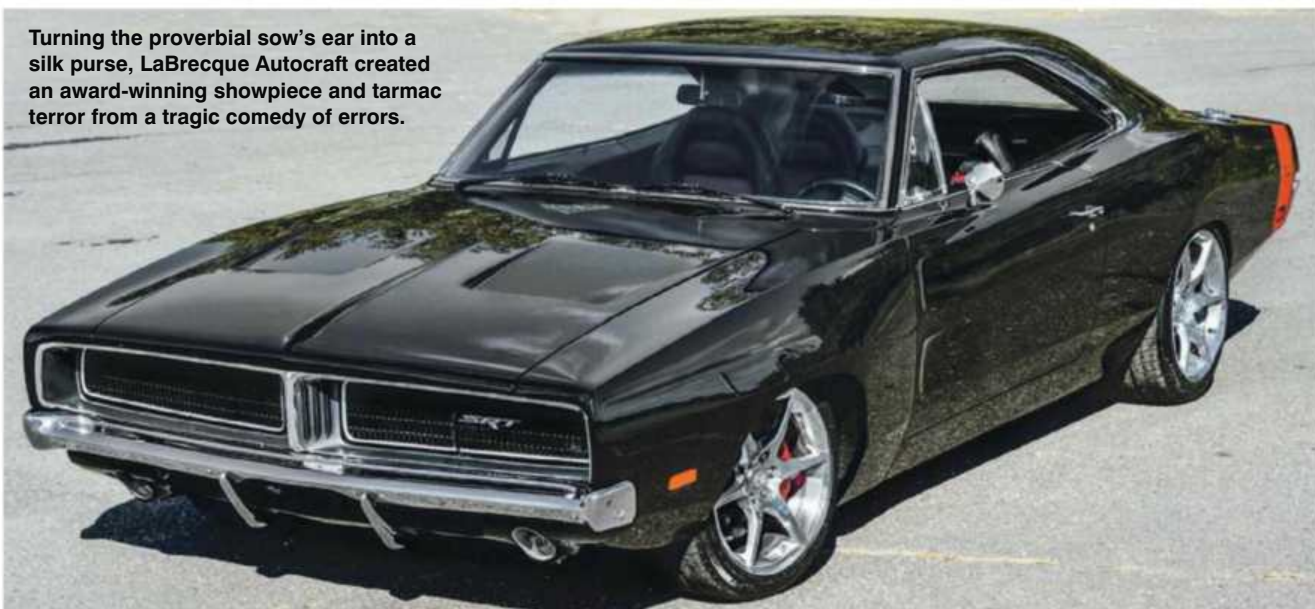
The Charger makes it to Connecticut and Mark's bud calls him to come down. The hood is popped and the Charger starts right up. Seems the coil wire wasn't pushed in all the way. But the engine nearly jumps out of the car when it's revved. The motor mounts are broken—the reason the gas pedal flopped on Mark's wife (nasty dragon). Mark figures he needs something more reliable, can't have a car breaking down all over the place. He has the 318 rebuilt and goes for headers and a new carb. Cha-Ching! 14 grand. Then they discover the gas tank is all Bondo'd up and leaks, the brake lines need to be replaced and why not go for a new radiator while they're at it. (Cha-Ching! etc.)

Mark's bud says he'll send the Charger to a shop he knows, they'll do the body over the winter, and Mark will have a nice car. It's now July 2000. In November, Mark



Viper chassis was stretched 21¼" to mate with Charger shell. Width was an even match up. Body is held on with four bolts. Mark saved a bundle by not going with the 4 lockwashers. So far the body hasn't popped off even with aggressive driving. Mark always carries a ½" open end wrench ... just in case.

Turning the proverbial sow's ear into a silk purse, LaBrecque Autocraft created an award-winning showpiece and tarmac terror from a tragic comedy of errors.







and his bud strip the Charger and send it down to the body shop. The body guy starts going through the car and calls Mark. "You gotta come down here—now." The car is on a lift and the body guy points to an area underneath the trunk. "Whazzat?" asks Mark. The body guy reaches under there and pulls out a slice of petrified ... pizza. "Whaddya having lunch?" Someone had used the pizza as matrix for a horrendous Bondo job, and then painted over the sins and the dragons. The car is all rotted underneath. The guy says Mark will never get his money out of the car what with all the body-

**ABOVE LEFT:** Chassis, except stretch, is unmolested Viper. Custom exhaust is neatly fab'd and uses Magnaflow mufflers. System runs straight back in the tunnel to end in stock Charger tips. **ABOVE RIGHT:** Stock charger gas tank is secured by transverse rather than longitudinal straps.

work needed. Not wanting to lose what he already has invested in this project, Mark gives the green light to do what's needed.

Everything is going well. Mark believes all the dragons are under control when he finds out that the body guy lost his shop.

Seems he has a drug problem. Dodging the dragons at the shop, Mark pulls the Charger and his parts, and carts the whole shebang to another shop, run by Eric. The shop is pristine. There he's informed that the druggie's assessment of the car never being worth what Mark will have to put into it is correct.

"But I have an idea," says Eric. "You can get a rolled Viper from X2 Collision in Indianapolis for 20 grand and put that under the Charger body." Mark tells Eric he's crazy. Eric says it'd really be cool. Mark goes home to think about it a bit and decides yeah, it'd really be cool. He



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- 3 times the output at idle • Longer-lasting and more durable than OEM alternators • 3 Year / 36,000 Mile Warranty
- Self-exciting or "one-wire" hookup • Fits 1963-85 Mopar applications with "square back" or "round back" alternator design •
- Three styles available: 150 amp single groove v-belt pulley - 150 amp double groove v-belt pulley - 240 amp double groove v-belt pulley
- Machined, Polished, or Black Anodized finishes available
- Built in the USA

Part No.	Description
FR1173	150 Amp Single Groove Pulley
FR1174	150 Amp Double Groove Pulley
FR1175	240 Amp Double Groove Pulley





**Charger wears original and donor Charger sheetmetal. Car's exterior image is a bone-stock '69 Charger R/T rolling on Viper wheels.**



**Stock V10 uses factory electronics. Note cut firewall and cowl to accommodate engine setback. Fender aprons also are cut for clearance.**

calls the Eric and says "do it." 'Course he doesn't tell his wife.

Eric calls Mark and tells him that X2 has a rolled Gen 2 Viper, a 2002 model, that was rolled with 13K miles for 25 grand. Mark forks over the dough and asks Eric when he's gonna pick up the Viper. "I'll take my trailer and get it this weekend." Several weeks roll by and the dragons are multiplying. Still no Viper.

Mark used to be in the business where he had a number of drivers all over the country. One of the drivers, Ray, moves classic cars. Ray picks up the Viper which comes with an extra cockpit (center section) and drops it off at the body shop. Mark is thinking that he's finally fending off that pesky horde of dragons. But they're not licked yet. A week later, Mark gets a call from Ray, the driver. "Hey, I just got a call from Scott at X2. He wants to know where the Viper is so he can pick it up."

"Why?"

"Your check bounced."

"Check? CHECK?? I gave Eric cash. He wrote the check."

Mark storms down to Eric's shop. He hasn't been there for a while, and what once was a pristine workplace is now a dirty mess, and the dragons are smiling. Mark lays the deal on Eric who comes back with the usual "must be a mistake" bit (the dragons are laughing). "Really?" Finally, Eric admits times are tough ... cash flow ... had to renew Mopar Action

subscription ... yadda, yadda. Mark takes stock of his situation while the dragons are dancing on his head. He has a Charger that's all cut up and a rolled-over Viper that X2 wants to repossess. He's spent a ton of money and he has ... nothing.

Mark calls Scott at X2. Scott says he coming to get the Viper. Mark says he's not coming to get anything because the Viper is his. Mark explains that he didn't bounce the check, Eric did, and Scott's an idiot for taking a check in the first place. He offers Scott a deal. Eric is gonna work on the project and Mark will send the money to Scott instead of paying Eric, so Eric will work off the debt. "It'll take a while, but at least you'll get your money." Eric has 3-4 guys working for him, so the project should move along nicely. The dragons back into a corner and go into a huddle.

**Seats are custom. Stretched Viper chassis allowed for back-seat. Note how the edge of dash protrudes into the cabin—result of the necessary modifications to get everything to fit and work as factory. Power windows are added, as is sound system. Door panels are custom with grab handle and door release handle being hand made.**

Eight weeks go by and Mark has whittled the balance owed X2 down to 3 grand. He drops by Eric's shop to see how it's going. The Viper is sitting untouched, there is no sign of Eric's workers, the shop is a mess and Eric is working on ... a pickup truck. Eric's plan is to fix up the truck and sell it to get out from under his debt. A few weeks go by and Mark gets a call from his driver, Ray.

"Hey Ray, how's everything going?"

"Great, except for two things."

"What's that?"

"Eric is dead and your car is on fire."

"WHAT??"

"Actually, I made up that part about your car being on fire so you could use it in a magazine article. But Eric did commit suicide—right in the shop. Right next to your Charger. He died shaking his fist at it."

Really big dragons, now ... breathing fire and all that. Mark calls Scott at X2 and tells him the news. Scott wants his 3 grand or he's coming for the car.

"You don't understand, Eric committed suicide."

"What does that have to do with me?"

"I was paying you for his doing the work, and he's in no position (prone) now to do any more work."

"I'm coming for my Viper."

"No, there's no Viper for you to get. It's my Viper."

"The car cost 17 grand and you still owe me 3."

"S-E-V-E-N-T-E-E-N?"

Yep, ol' Eric stuck it to Mark, charging him 25 for a Viper that cost him 17 to make a quick 8 grand profit. Mark makes an offer to split the difference on the balance, and Scott accepts.





Mark finds a restoration shop in Connecticut run by a guy named Charlie. Charlie says he has a 2-year waiting list. Mark explains the Charger/Viper project. Charlie thinks for a while and then says he'll take it. Maybe it was something he always wanted to do. Charlie looks over the Charger, says Eric's work is garbage and he has to start from scratch. Mark has about 60 big ones into the project at this point and it isn't even off the ground. Can't bail now. The dragons are having a party. Charlie explains that he's gonna cut the Viper in half and weld in 21¾ inches from the spare cockpit to match the Charger body's length and have room for a backseat. The width of both cars match. The Charger body and Viper chassis will attach with just four bolts—one at each wheelwell.

Charlie has the project for about 2 years, develops health problems, retires



The dash face and gauges are stock Viper, but from the bead on top of the dash to the windshield is highly modified as a new structure underneath had to be built from scratch.

and sells the shop to Chuckie who picks up on the project. Eventually, the body, chassis and wiring are completed, basically everything but the interior. Chuckie sends the car out to an interior shop—another Charlie. “Ringaling.” Mark picks up the phone. It's Charlie #2. Chuckie's work is trash. Gaps don't line up, the wipers are in the wrong place and won't work, the wheel tubs are a mess and a whole bunch of other problems. Seems Charlie does bodywork in addition to interiors. Mark calls Chuckie. Chuckie calls Charlie. Charlie calls Mark. Chuckie calls Mark ... everybody's screaming at everyone else.

Mark sighs and tells Charlie to fix whatever needs fixing. Charlie says he'll do the interior, but Chuckie ought to fix the problems for free. Mark doesn't think Chuckie can handle it. Charlie has the car for a couple of years and does what he can. But he can't handle the exhaust and some other details. Mark, who's about as upbeat

at this point as Willie Loman in “Death of a Salesman,” flatbeds the Charger to Mike LaBrecque at LaBrecque Autocraft in East Windsor, Connecticut ([www.labrecqueautocraft.com](http://www.labrecqueautocraft.com)); 860-523-3122. Mike, with 25 years in restorations, fabrication, custom painting, working on musclecars, hot rods and racecars, seems to know what he's doing. First question: Has the car ever been driven? “Err, no.”

Mike cranks the V10. Low oil pressure, runs hot. He changes the oil. Metal in the oil filter, not good. Bottom line: the V10 needs to be rebuilt. The dragons are rolling on the floor with flames coming out of their ears. Six grand, Cha-Ching! Mike also comes up with the missing oil cooler. He goes over the Charger with Mark, pointing out the poor bodywork, uneven body gaps, tires hitting inside the wheel tubs, how the exhaust that had been planned


to run through the rockers would have cooked off the paint, etc. If Mark wants to show the car, the bodywork will have to be redone—this time with no Bondo. The dragons have pinned a bull's-eye to Mark's chest and are having a grand old time shooting tongues of flame at it. Things are quiet at the Tuchmann household. With the Charger in various shops for 10 years now,

Mark's wife forgets that the car still exists, and Mark, pretty much numb by now, dares not bring up the subject.

Mike LaBrecque works on the Charger for two years and does manage finally to straighten out all the body problems. He fabs a custom exhaust, bending the pipes and welding them solid, powder coating the system and running it down the middle though the tunnel straight out the back with Charger tips. Mike goes through the wiring, handles all the necessary mechanical work so everything now functions as it should. An immaculate Deep Black Glasurit 22 line single stage urethane paintjob is the crowning touch.

The Charger rolls out of Mike's shop in October 2014. Mark never intends for the car to be a trailer queen, and he drives it—hard and often. “It's a rocket,” he says, making his gums bleed on acceleration and his eyeballs to twirl in the corners. Mark enters the Charger the 2015 Boston World of Wheels show where it wins Best Street.

... so Mark finally slew all the dragons, and he and his dream Charger are now set to travel many highways and byways ... and live happily ever after. THE END. ♣



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# Demand Performance

Choose and  
tune the right  
street carb.

*Story & Photos By Richard Ehrenberg, SAE*

**L**ongtime readers know we've been pushing electronic fuel injection swaps for almost two decades. Reality check: 99.73% of classic Mopars still have carburetors. We've enumerated the myriad advantages that EFI has over carbs time and time again, but it is what it is: Carbs are simple and cheap, a laundry-list of disadvantages notwithstanding. You want a carb? You got it.

Our objective, then, is to point you towards an understanding of what makes a good street performance carburetor so you can choose wisely, and help you begin to understand the tuning process. Before we begin, however, a bit of foundation-building is in order.

We'll assume, for the purposes of this glowing bit of prose, that you have an engine somewhere between 273 and 500 cubes, and a single four-barrel.

The first Mopar-OEM 4-Barrel was the Carter WCFB (on the '55 C-300), but that's 100% obsolete and doesn't have any place in modern street apps, excepting a '50s platinum restoration. Carburetors really came out of the dark ages when Carter's AFB (Aluminum Four-Barrel) was released in 1959. These were generally small carbs on large engines, so "transitions"—the momentary circumstance when the carb's fuel flow may not always keep pace with a rapidly-opening throttle (especially the secondaries) were generally not a problem, there was very little flat-spotting tendency, and the accelerator pump worked just fine enrichening only the primaries.

Soon, however, AFBs were increasing in airflow, and being fitted to engines as small as 170 cubes (circa 1960, Slant-Six Hyper-Pack). Applications such as these could have led to a rather severe "bog" (momentary lean-out) if the driver mashed the throttle wide-open at a lower RPM. The fix? Carter added a *second* secondary throttle blade just above the driver-operated one, this was not connected to any mechanical linkage. Instead, the blades were simply kept closed by a counterweight, and were thus forced open slowly by airflow alone. Voila! The first true "demand" automotive carburetor was born.

It wasn't long before engineers improved on this scheme. By moving the "second" secondary throttle to the top of the air horn, a simple adjustable-tension spring could replace the counterweights. Furthermore, this arrange-

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ment provided the needed pressure drop, effectively replacing the need for bolt-in, airflow-restricting venturis to promote fuel flow. Carter tagged this design "AVS" (Air Valve Secondary), and this is the carb we'll soon be analyzing and studying for this work of prose.

By the early '70s, emissions regulations were growing ever-tighter, and one short-sighted response was to utilize gasoline that vaporized more quickly. While this may have reduced emissions (as long as evaporation from the fuel system was contained), it also brought with it a host of drivability problems, especially in warmer climates. The Chrysler/Carter response was the ThermoQuad, which was a sea-change in two areas: First, the float bowl was constructed of a plastic compound, allowing the fuel supply, on average, to be 20 deg. F. cooler. Secondly, the throttle body was drastically redesigned, becoming what is known today as a "spread-bore" pattern, i.e., small primaries and huge secondaries.

The air-valve secondary feature was continued, albeit somewhat more sophisticated. Many, myself included, feel that this was the best street carburetor ever manufactured, but it is tough to recom-



**The Will Carter four-barrel was the world's first, but, except for a platinum resto of a '50s Mopar, fugghetaboutit.**

mended this today for fresh engine builds. Why? For one, the last T-Q was produced in 1985, meaning you're looking at either a rebuilt, or one needing same. Second, there are a whole slew of intake manifolds that won't allow a direct bolt-on of a spread-bore. Then, while needed rebuild and tuning components can be had, they require some tree-shaking to find, and even harder is finding someone with the cojones to dissect, properly reassemble, and tune a T-Q. Not that they were difficult to work on—they *are not*. It is simply, in

most cases, fear of the unknown—it *looks* so different!

Demon Fuel Systems (BG) has reintroduced the T-Q, now badged as the "Street Demon," and a plastic float bowl is again available. Unfortunately, the largest airflow capacity of the SD is 50 cfm less than the *smallest* OEM T-Q, for reasons unknown. Still, it is great to have this option available again, we may dissect one sometime soon.

Back to the AVS. When Carter folded up shop around 1985, the AFB design was picked up by Weber, part of the Italian conglomerate Magneto Marelli, in turn a division of Fiat who now, as you surely know, owns Chrysler. The vast majority of these carbs were distributed by Edelbrock, who slowly ramped up variations and options. After a couple of decades of successful AFB sales, Edelbrock finally stepped up to the plate and re-intro'd the AVS (which, in Edelbrock-ese, stands for Adjustable Valve Secondary.) Both theirs and the original moniker are technically correct, in fact, calling it an AAVS would be spot-on.

OK, you know the drill: Lions are being unchained from pits beneath the coliseum as we speak. Follow along as a brand-new Ed AVS gets visually dissected. ▶▶▶▶▶



**The AFB was the first modern four-barrel, used on most performance Mopars through 1967, and, in dual carb applications such as early Max Wedges and on Street Hemis through the end (1971). The vast majority of Mopar AFBs used the small ( $47/32$ " ) air horn diameter. This is a '65 273, you'll note the oddball idle air bleed screw (circled), this identifies a CAP (Calif. smog pkg.) version.**

ThermoQuads took demand-airflow-matching to the Nth degree. This is a rare 1000 cfm aftermarket version. Happily these maintained the Chrysler heritage (linkage arm), but were hand choked. OEM T-Qs were all 850 cfm (big blocks) and 800 on 318, 340, and 360 engines.



**ABOVE:** The Carter AVS, though similar in appearance to the AFB, was actually a revolutionary step forward. With a simple "turn of the screw," the secondary air valve (arrow) could be adjusted to provide near-instantaneous throttle response on virtually any combination of displacement, vehicle weight, gearing, torque converter, etc., all the while supplying near-zero extra fuel. This is how you get 150,000 miles out of a set of piston rings. Smallblock and 383 AVS carbs were 480 cfm, 440s used 580s. Excepting some early-production 1968s, which had plastic bushings on the air door shaft (which would split and bind), these were trouble-free designs one and all.



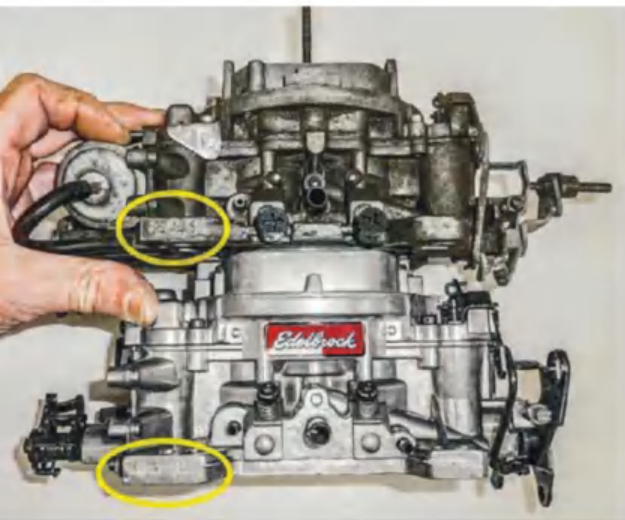


BG offers an updated T-Q rated as high as 800 cfm, still smaller than OEM T-Qs. They are sold with your choice of plastic or aluminum float bowls.



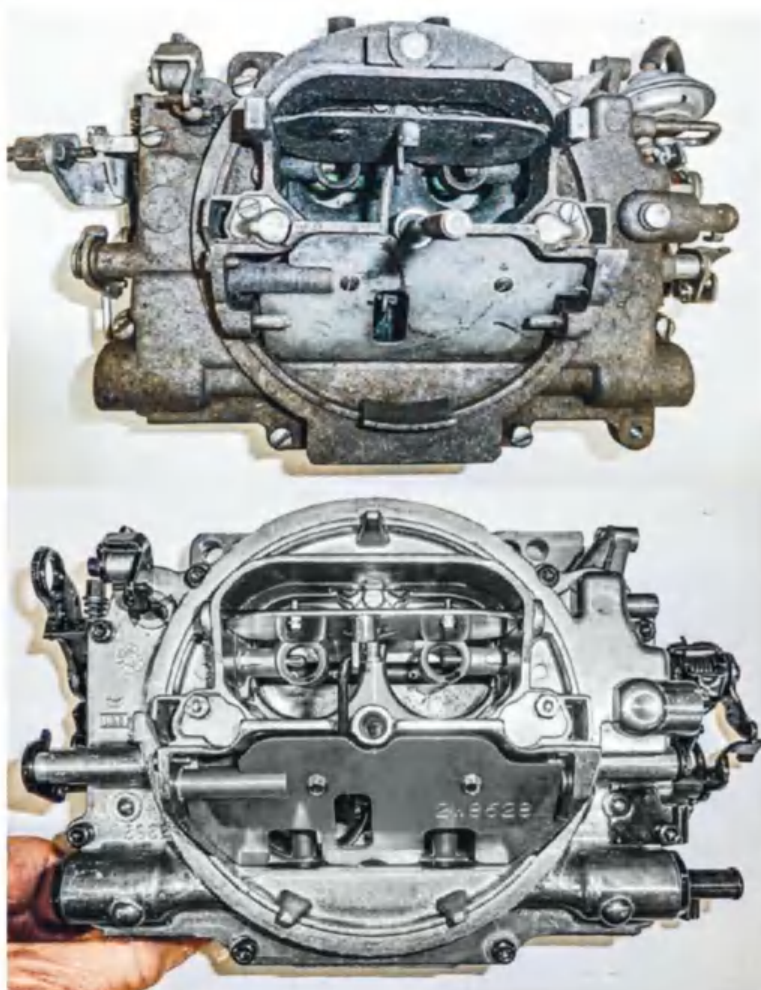
Inside a counterweight-valve AFB. The weights (right) must be drilled or otherwise lightened to speed up secondary operation.

A new Ed 800 AVS (left) next to an original 480 cfm Carter. Except for almost 50 years of crud on the original, they appear as peas in a pod. The new one is the "as cast" version. Edelbrock also offers shined-up and blacked-out models, as well as small-caliber 500 and 650 cfm versions.



**ABOVE:** Front view also shows near-identical DNA. The new Ed unit even has the part number stamped on the foot (circled) in the same font as original.

**RIGHT:** Up top, excepting the plating color, they also appear virtually identical. But...

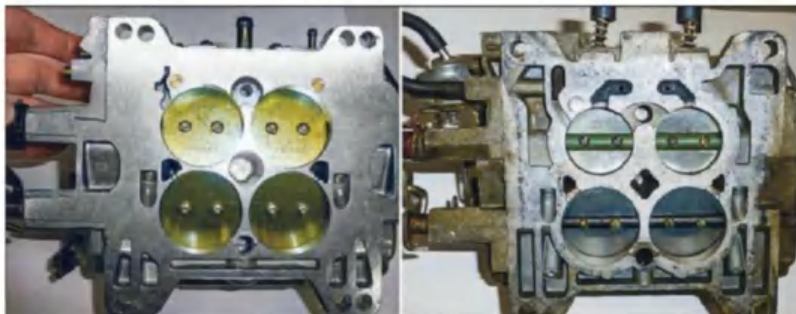




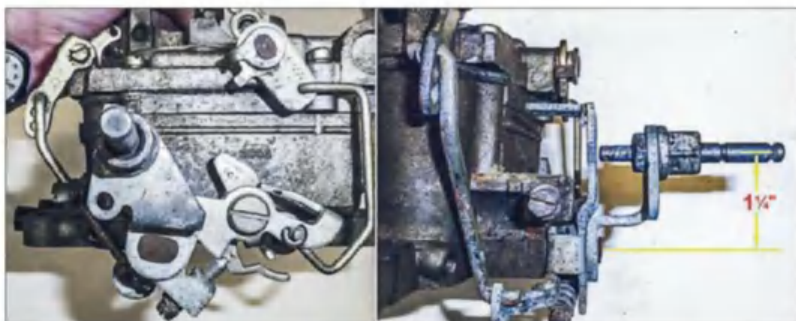


...open the air door, and you'll find a totally different secondary fuel supply system. The original AVS used only discharge nozzle tubes (relying totally on the air door for venturi effect). The newer Edelbrocks use a bolt-in venturi, as in an AFB. How, then, can they possibly have increased the airflow capacity?

**BELOW:** Choke (passenger) side view displays the manual choke hookup provisions on this version, an electric choke version is also available. The two machined bosses (circled, yellow) would accept the stock '60s choke diaphragm. We think it would be easy to convert the Edelbrock to function with a stock Mopar well-type (divorced) choke thermostat. The fuel line inlet fitting (circled, green) is the original thread, you could screw in an original fitting.



**Simple:** In hot rod terminology, they hogged it out. Original AVSs had  $1\frac{1}{16}$ " secondaries (all versions), 440s used the same size primary bore, while 340s and 383s got by with  $1\frac{7}{16}$ ". The Edelbrock 800 measures a huge  $1\frac{7}{8}$ " on all four corners



**LEFT:** Throttle side of an OEM carb shows the Mopar-specific throttle lever with the all-important  $1\frac{1}{4}$ " stud-center to pivot-center dimension and the wide offset. You must maintain these measurements no matter what type of carb you adapt to your Mope.



**A.** The Edelbrock's throttle lever has been re-engineered to Chevy dimensions. This requires...



**B....**a simple bolt-on adapter, Ed P/N 1481. Again, this is a *must* on any Mopar installation, omit this and you'll not get WOT, your T/ Flite's KD will be totally screwed up, etc.



On a Carter or Edelbrock, be it AVS, AFB, or T-Q, a large chunk of the tuning can be done by simply popping out the metering ("step-up") rod(s) for a swap. The mechanical part of this, anyway, is child's play.

Note two sets of "piston rings" (circled inset), this gives the piston two steps. The OEM Carter (left) and Edelbrock (right) setups appear identical, and they are interchangeable, however...

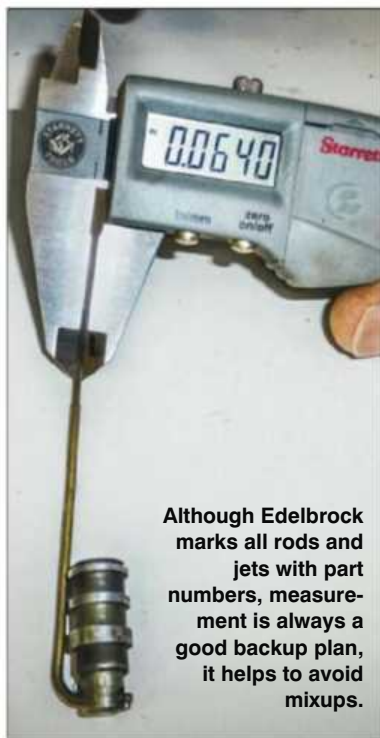




...the Edelbrock rod design (left) is considered 2-step, although the transition between the steps is very gradual (tapered). OEM was 3-step. It is important to remember that, unlike in a Holley, there is no "power enrichment circuit." When power is called for at WOT and you want 12.5:1 A/F, the smallest diameter of the step-up rod is still partially blocking the main jet. Therefore, even WOT tuning can be changed by only a rod swap. (If the primaries are, however, lean at both cruise and WOT, a jet swap makes more sense.)



Edelbrock offers a great tuning kit (foreground) which features a wide assortment of jets, metering rods, and the all-important piston springs, which set the vacuum level for the enrichment. These were not included in the original Carter AVS and AFB kits (rear). Ed also offers optional accelerator pump discharge nozzles ("pump shooters"), cat. no. 1465, so if you have a primary bog, and adjusting the pump actuator rocker arm doesn't fix it, you may need to upsize from the original nozzle. Admittedly, this would be an unusual occurrence.



Although Edelbrock marks all rods and jets with part numbers, measurement is always a good backup plan, it helps to avoid mixups.



This is where the magic happens. The air-door tension-spring adjustment. There's a zillion ways to do this, but the sure, easy way: Keep backing off the tension until you begin to notice snap-throttle bogs, then tighten 1/4 turn. Quality here is much better than OEM Carters, which used a simple stamped steel nut. This often twisted or bent when adjustments were made.

The hand-choke version features an override valve on the choke plate, this is identical to what was on carbs back in the day before automatic chokes. This can help prevent fouled plugs if an unskilled driver over-choke the engine.



The air horn on the new Ed's is retained by Torx screws. Remove these and lift up the air horn to swap jets, you don't even need to unbolt the carb from the engine, and zero fuel will spill.

One of the reasons why Carter closed up shop was quality control issues, exacerbated by the exhaust emissions requirements ever-tightening in the '70s. Carter's parent company, ACF, just didn't make the investment required to keep pace with technology—bad decision. Competitors Holley and Magneto Marelli have clearly thrived, both in carburetors and fuel injection (MM's EFI stuff is also sold to the aftermarket by Edelbrock).



In contrast, Edelbrock has made a major investment in modern manufacturing technology, right here in the USA (North Carolina).

Photo: Edelbrock, LLC





**20/20 HINDSIGHT DEPT.**

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First came the Gold Duster package in mid-1970. The Twister followed in 1971, putting the Duster 340 musclecar look on a slant-six or 318 model. The Space Duster package put a fold-down rear seat and trunk divider panel in the car to give hatchback-like utility. Actual space dust was a rare option but was rumored to cause health issues so most buyers passed it by.

By 1976, with the end of Duster production in sight, Plymouth offered the Feather Duster, a lightweight economy special. The same year, there was another high-trim package, the Silver Duster, but the Chrysler employee who suggested offering a Bronze Duster was banished to the magazine publishing industry, never to be heard from again. (We always wondered why there was no Brake Duster with asbestos pinstripes, or a Crop Duster with a huge bi-wing rear spoiler, and/or a toasted 318 oil hog.)

In the Duster's sunset year, there was even a Fonzmobile, a Plymouth showcar festooned with 1950s customizing touches to cash in on the popularity of the TV show "Happy Days." The Fonz, of course, was Arthur Fonzarelli, a.k.a. Fonzie. And he drove a motorcycle, not a car. But never mind. The Duster showcar had a flame paintjob, lake pipes, spotlights and wide whitewalls. "Aaaaayyy!" Plymouth figured the car might inspire others to buy Dusters and customize them. (Chrysler should have offered it as



the Fonz Duster). Fonzie probably would have told them to "Sit on it!"

Along with most humans on Earth, Russ Schoen of Applegate, Calif. has never seen the Fonzmobile, and so it was not his inspiration to put flames on a Duster four decades later. His inspiration was dirt. That is, he bought his 1970 Duster already painted blue, but he could see dirt specs under the finish on the fenders and hood. The rest of the paint, though less than stellar, was good enough to leave alone. So instead of a full respray, he had the

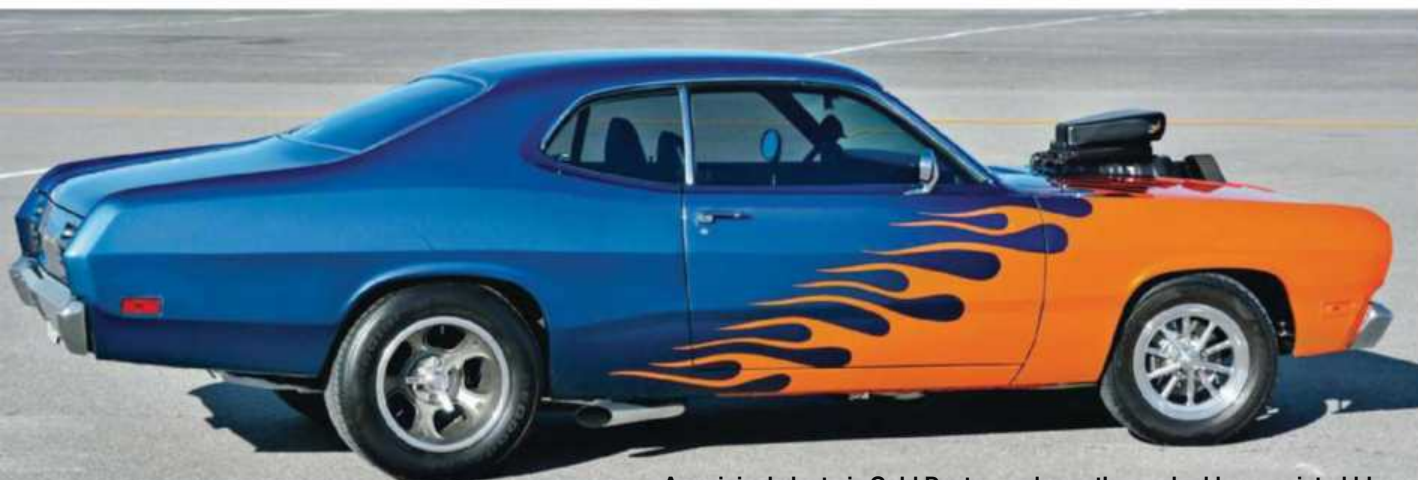
**Free breathing exhaust uses SPD full custom system—2" headers into 3" pipes with Flowmasters and electric cutouts. License plate is HOT DUSTER but there was no room for the "O" or "E".**

flames put on. "Aaaaayyy!"

But there wasn't enough firepower under the hood, where a previous owner had replaced the original slant-six with a 318. This was an original matching-numbers Gold Duster, authenticated by top Mopar authorities in the

field as one of only about 15 built with the special-order Gold Dust Delete package (in case you care.)

Schoen had other ideas. Years before, he'd plucked a 340 from a ratty 1971 Duster and transferred it to a 1946 Dodge pickup that he was planning to street



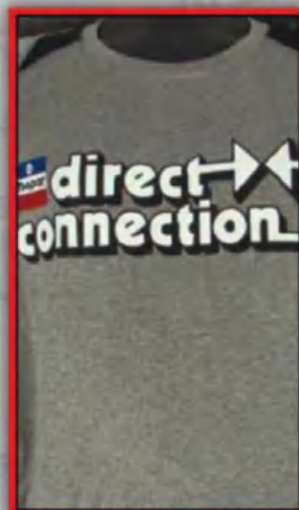
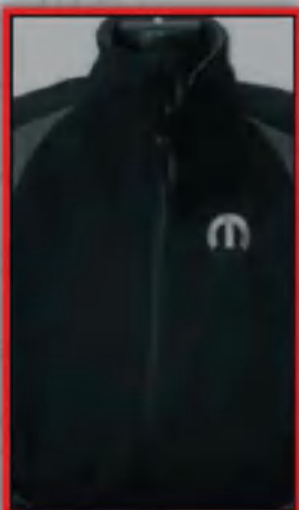
An original slant-six Gold Duster package, the car had been painted blue when Russ first got it. Suspension is Magnum Force up front and stock (with 6 leaves) out back. Brakes are Wilwood front, stock drums in the rear.



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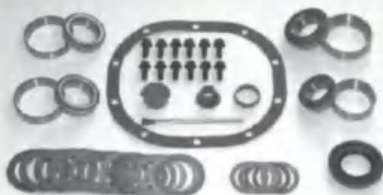


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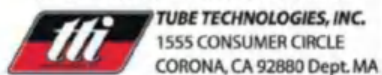


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## → FIRE DUSTER



**340 is stroked out to 415 inches. A custom EFI setup science by Autotrend EFI uses a Holley computer. BDS 8-71 blower currently steps up the horse pressure to 500 at the wheels. Not satisfied, Russ pulled the engine and sent it to Hughes Engines where their cam (to replace the current Isky stick) and massaging is expected to elevate performance into the 700-800 hp range.**

rod. But that project was just sitting. And, for the record, that Duster 340 was an original Plum Crazy A-body, but it was the 1970s when he sold it, and nobody at the time gave a ratzazz about these cars.

But Schoen didn't want just 275 horsepower. He wanted a blown, fuel-injected motor to go with those flames. So in went a Mopar Performance 4-inch stroker crank to make the 340 a 415. Schoen ran the stroker naturally aspirated for a while, using 8-to-1 compression because he knew eventually he'd put fuel injection and a blower on it.

And that's what he did. The fuel injection system is a custom deal by Autotrend EFI in Diamond Springs, Calif. Autotrend specializes in hiding fuel injection

systems in fake carburetors to keep an old school look. Schoen doesn't have fake anything but the system is still pretty much hidden. He went with an Indy Cylinder Head Modman manifold with 8 injectors. There are an additional 8 injectors in the spacer plate between the bug catcher and the blower for intake cooling. The system is controlled by Holley's latest computer setup as we've used on our Road Runner project car.

With a BDS 8-71 blower topping it all off, Schoen was hoping for something in the 700 horsepower neighborhood, but even after tuning, the best was 500 hp at the wheels. He talked to the folks at BDS, whose advice went counter to what Autotrend EFI was doing, but their sug-



gestions didn't result in any improvement.

So, after Schoen waited, wrench in hand, for these photos to be taken, he immediately pulled the engine and sent the heads to Hughes Engines in Illinois. Dave Hughes ported the Edelbrock heads and provided a Hughes cam, and told Schoen he wouldn't be surprised to see 800 hp at the flywheel. Schoen says he would be happy with at least 700 ponies, because he indicates that Indy Cylinder Head sells a similar package and advertises 725 hp. Once the engine is back in the car, where it will exhale through a custom exhaust by SPD in Rancho Cordova, with 2-inch headers dumping into 3-inch pipes with Flowmaster mufflers and electric cutouts, Schoen will only be able to measure rear wheel horsepower.

In the meantime, though, there's lots of other good stuff to talk about, like the completely redone front end with Magnum Force suspension and power rack-and-pinion steering. The rear still uses the original suspension design, but with six-leaf springs.

Schoen built the Duster to go as well as show, which is why it's got a Tremec TKO 600 5-speed stick. With the 3.91 gear in the 8 $\frac{3}{4}$ " rear, the engine turns just 2400 rpm at 80 mph, making long highway

**Stock dash contains Autometer dials. Note flamed shifter ball and a peek at the all-important fuzzy dice.**

drives a breeze. Last year, Schoen drove more than 500 miles one way from Applegate to Las Vegas for Mopars at the Strip.

The car goes for a strip look with 15 x 6" ET Gassers on front with Firestone Firehawks and 16 x 11" ET Fuelers out back, wrapped with fat BFGs. Schoen plans to switch out the factory power brake setup for a Hydratech system. He's already got Wilwood discs up front, but kept the factory drums out back.

Although there's no A/C, Schoen drives in relative comfort in an interior he redid himself. He mod'd the I.P., filling it with Autometer gauges. And check out that flame-painted shift knob on the Hurst shifter. We've never seen the Fonzmobile, but we'd bet that it had fuzzy dice like the



ones in Schoen's Duster. Schoen went with seats from a '73 Duster and recovered the rear seat to match.

The finishing touch is a set of "Duster 415" decals that Schoen had made locally. We think he missed an opportunity to outdo the Fonzmobile, though. He should have called it "Fire Duster" (or something similar). 'Course, a little too much heat and the whole thing burns to a crisp and then you know what up and you end up with? ... an Ash Duster. ■

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# White Hat Special

*The package itself was cool, but not as cool as the ad campaign.*

Story & Photos By Larry Weiner

The year was 1969. And when it came to performance, there's no question that it was a very good year, just like the title of the popular Frank Sinatra song from mid-decade. Muscle cars roamed the streets in ever increasing numbers all over the country, and it seemed as though the party would never end. The Big Three knew a good thing when they saw it, and kept churning out exciting new models powered by engines with ever increasing horsepower every year. To say that nearly everyone wanted in on the action was an understatement, and colorful cars, many with exotic sounding names, flew off dealer lots as fast as Detroit could build them.

Over at the Dodge Boys, 1969 was another banner year. After the record sales Dodge enjoyed in '68 thanks in no small part to a fresh lineup of great looking B-body muscle cars marketed under the catchy "Run With The Scat Pack" moniker, the rationale for the new year was why mess with success. Enthusiasts were undeniably enamored with the all of the models, but none made a bigger splash than the incredible new Charger. Entering its sophomore year, the Charger continued unchanged other than details such as a new split grille and revised taillights. The dramatic wedge shape, complemented by Coke bottle styling and a recessed backlight, made the Charger one of the most beautiful cars to ever come out of



Motor City. As an added bonus, engine options even included the mighty Hemi, providing it with the plenty of power to match its incredible good looks. Management at Dodge led by the well-respected Bob McCurry knew that they had a solid gold hit on their hands and weren't about to mess with success, especially after recording a whopping 300 percent increase in Charger sales in 1968 over the preceding year.

Dodge advertising reflected the times, and beautiful girls were an integral part of the marketing. For 1969, the tag line was Dodge Fever, and the model chosen for the campaign was Joan Parker. A wholesome little pixie, she quickly

became the face of Dodge in television, magazine and newspaper ads, in addition to appearances at automobile shows and events around the country. Wearing a white mini dress, chain belt and Go-Go boots, Joan exemplified the look of the flower power era and was a perfect fit for ads promoting the youthful looking Dodges. If you liked muscle cars, odds were you had Dodge Fever, and the only way to cure it was to get yourself an exciting new '69 Dodge.

Among the challenges automakers faced after the new models debuted in the fall was how to keep the excitement going throughout the model year. One of the popular methods developed by the Madison Avenue ad agencies to drive sales during the year was seasonal ad campaigns. Dodge, much like their competition, was no exception, and in the spring of '69 launched the White Hat Special promotion. A special accessory package offered at a discounted price, the White Hat Specials were available on Chargers, Coronets, Polaras and Darts. Enhancing the ads was Joan Parker's smiling face in her trademark white mini dress and matching Go-Go boots. To tie in with the Dodge White Hat Special tag line, Joan even sported a white cowboy hat.

The White Hat Special was a successful seasonal program that was followed by many others during the ensuing years. But 1969 stands out as a very special year for Dodge. It was a time when the planets aligned thanks to exceptionally good looking cars that offered exceptional performance and great value across the board. ■



A woman in a white outfit and hat stands next to a blue 1969 Dodge Hemi Charger White Hat Special parked in front of the Superdawg drive-in. Two large, colorful, anthropomorphic hot dog figures stand on the roof of the building. The building has a black roof with a red 'Superdawg' sign and 'drive-in' text. The roof is decorated with a row of colorful, stylized hot dog figures. The scene is set against a blue sky with white clouds.

Two Dodge cars are shown against a black background. The top car is a gold 1980 Dodge 400 3-Speed Hardtop, viewed from a front-three-quarter angle. The bottom car is a red Dodge 3-Speed Hardtop, viewed from a rear three-quarter angle. The Dodge logo and name are visible in the bottom left corner.

We take a Dodge.  
Add the options most people want.  
Then cut the price. And give it a name...  
**DODGE WHITE HAT SPECIAL**

[illegible]

It's your move. Get  
**DODGE** fever.

A woman with long brown hair is smiling and posing next to a blue classic car. She is wearing a white wide-brimmed hat, a white long-sleeved mini dress with a black belt featuring five circular buckles, and white knee-high boots. The background shows a parking garage structure.





REDUX DEPT.

Open and closed, just like your jackknife. LSD (Lambo) makes direct bolt-on guillotine door kits for specific makes—a popular item for ISIS Toyota pickups.



# 2003 SRT4 ups the ante to a 500 HP street terror.

**STORY** • Scott "Instigator" Longman

**PHOTOS** • TheBruntBros

**S**ometimes editor Gromer is just a sociopathic lunatic. So he sees the first draft of this story, and he wads it into a ball and wings it so hard that it breaks the window and ends up stopping traffic on 24th street. He springs up on the desk and starts jumping up and down. Papers fall on the floor, he spills his coffee, and worst of all, he knocks over and breaks his beloved framed picture of Tony DeFeo. He's bellowing. "No, see, I can take one look at the pictures for most of this. And I don't want some extended metaphor. What you have to DO is go get inside the owner's head!"

Well, okay. So we get a Dakota, pick up a tweed jacket with patches on the elbows and one of those psychiatrist couches and drive to Delray Beach, Florida. What the hell, it was snowing up here anyway. We pull up in Jerry Ciambro's driveway, and tell him we are here to get into his head. He threatens to call the cops. Then we explain that we are with Mopar Action, and things calm down a little. Still, he wouldn't get on the couch. So instead, we have to interpolate the inside of his head from what he built.





# RAM RUNNER



Essentially an 11-second racecar for the street, Jerry thought the in-your-face look would be more amusing than the (yawn!) sleeper approach. Roof scoop is non-functional.





**Vortex generator (roof vanes) improve aerodynamics. Wing is a cut down (shortened) Bitsumishi Evo piece. Decklid is carbon fiber. Graphic is a Road Runner cartoon with a ram's head, hence the name, "Ram Runner."**

What he built was a radical 2003 Neon SRT4. He always liked the Neon, and always liked the SRT4 package, so he bought it brand new. It was his daily driver in stock for about 38,000 miles, but leaving well enough alone simply wasn't realistic. See, Jerry is an owner of Flawless Auto Repair (<http://www.flawlessautorepair.com>) so he has a ridiculously high level of skill when it comes to hot rod work. And he had a LOT of ideas. His formula here was classic hot rod: reduce weight, add power, and give it a retina-bending look. Our first conclusion about getting inside his head is that he knows what he is doing.

First was reducing weight. Jerry likes carbon fiber. We mean, really likes it. And not any fake stuff, either. So he proceeded

to replace everything that he could replace with the stuff. The hood. The door handles. The decklid. The front splitter. The fenders. The wing. The ashtray knob. His socks. He took the weight out any way he could.

Of course, the heart of any hot rod is the motor. The 2.4 liter Mopar Four came with a good, stout bottom end, and Jerry's research showed that it wouldn't go Democratic on him unless he put in more than 500 horsepower. So, of course, he put in just 500 horsepower. The work

is all in heavy breathing: with ported and polished head, Crower cams and a Darrell Cox Performance intake and fuel system. He runs it off a Stage III MP computer with AEM piggyback computer. To exhale the combusted gas, he bolted up an AGP manifold (required to use a "normal rotation" aftermarket turbocharger), running from said turbine housing to a single 3" pipe and a Magnaflow muffler.

Of course, the way to get a 2.4 liter motor to make 500 horsepower is to smash a better part of the ozone layer into it. Jerry yanked out the oddball in-manifold Mitsu hairdrier in favor of a Borg-Warner S256.63AR unit. Keeping all that mightily compressed atmosphere from boiling is a big AGP intercooler. At full spin, it's good for mindboggling 29 psi.







Now bulletproof 2.4 with head stud kit pumps out 500 ponies thanks to Darrell Cox Performance pieces including hand-made aluminum manifold, 70mm throttle body, 1/2" fuel line with twin 255 lph pumps regulated by Aeromotive, 1000cc injectors, adjustable cam gears and a big Borg-Warner turbo. There's a 50 hp wet nitrous shot for good measure.

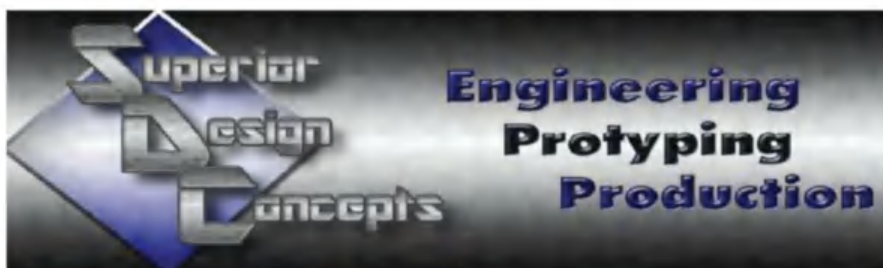
Yes, he has to use octane boost to keep it from blowing up. As to the inside of Jerry's head, this tells us he is pleasantly maniacal. 'Course, just in case he needed it, he tacked on a 50 hp wet NOS nitrous shot.

Naturally, getting all that to the ground isn't easy, particularly in a front-wheel-drive ride. Jerry found all the weak points in the stock T850 5-speed. The factory

cable shifter goes past its normal travel on the 2-3 shift if you slam it. So the ear breaks off the brass shift fork. A B&M shifter with positive stops and a Hurst handle fixed that. Then the input shaft headed north as it was already as far south as it could go being in Florida and all. More hardened billet. The trans is now so stout the Kurds are using it in their

homemade tanks. Jerry's trans mates up with an ACT ceramic clutch plate and steel flywheel. On the output side, he got huge CV joints and enormous half-shafts. All that goes to a limited-slip 3.52 diff. Of course, these cars were, even in stock form, were notorious for torque steer and traction issues, so Jerry spec'd out the geometry, and came up with traction bars, subframe connectors and DC coilovers. At the tarmac, he went with American Racing wheels, and wrapped them in BF Goodrich KDW Comp 2 rubber, which he reports give him the best bite off the line of any street tire he's tried.

Which brings us to the hot rod look. First was the basic color, solar yellow. In direct sunlight, you need to look at this thing like you look at an eclipse: with shades, or one of those boxes with the tiny



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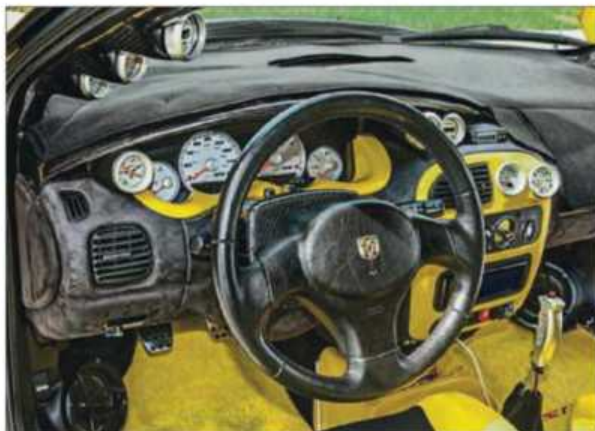
## Turbo Talk

Historically, turbochargers bolted to the exhaust manifold(s), as on the well-known 2.2 and 2.5L Trenton engines. By the time the Neon SRT4 was planned, however, emission regs had tightened, especially regarding “light-off” (warmup) pollutants. The cure was a clever design integrating the exhaust manifold and turbo-charger into one compact unit (top). In this design, the turbo’s turbine housing (circled) is actually part of the manifold. Besides reduced emissions, this design minimized turbo lag, it also created a very compact package. The entire assembly, which uses a turbocharger that rotates opposite of most others, was supplied by Mitsubishi, the friendly folks that built the planes that bombed Pearl Harbor.



When it became apparent that there were customers willing to pay more bucks for more hp, Mopar Performance developed the Stage 3 bolt-on kit, which used a revised and enlarged manifold/turbo arrangement, featuring a titanium wheel, but keeping the basic all-in-one concept intact (this kit had to pass EPA regs, too). The 300 hp kit bolted right on, not too shabby!

But some wanted more, and the 2.4L engine (stock forged goodies), and euro-turbodiesel-minivan (Chrysler designed) MTX proved capable of standing the flak. The aftermarket responded with an exhaust manifold (bottom) that would accept a wide range of “generic” turbochargers. This is what Jerry Ciambrone has done as part of the effort to more than double the Neon’s original sub-250 hp rating. — R.E.



**LEFT:** Gauges galore. Autometer stock went up after Jerry bought all this stuff. B&M shifter with Hurst handle helped solve the “over-shift” problem with the stock cable shifter. The B&M has positive shift stops. Interior is all carbon fiber.

**BELOW:** Stock seats are recovered in suede.



Nose badge is custom.



pinholes. To make extra sure that the look is attention grabbing, Jerry left the hood, decklid and splitter their natural carbon-fiber color. Then, lest anyone had misunderstood, there are the graphics. From the side, a flame theme shows up on the front doors, the back doors and the quarters. The flame theme continues in a roiling hellscene version of the ram’s head on the hood. And then there’s some more under the hood, in case the valve cover wants to see an image of a Neon. That mural also includes nods to Mopar history, like the Duster character. Which brings us to the



car’s custom emblem. Jerry put together the wheels from the Dodge Super Bee character, the body of a Plymouth Road Runner and the head of a Dodge Ram, which he called the “Ram Runner.”

The key part about all this is that Jerry built the car to drive, and drive hard. Although he does attend shows with it – and has collected a connex full of trophies – this is absolutely not a trailer queen. In a mild state of tune at 400 horsepower, and with continuing traction problems, Jerry’s blasted down the 1320 with an 11.90. We call Gromer to tell him this. We have to hold the phone at arm’s length, because he’s still going off about the broken DeFeo picture like it’s our fault. But then he pauses. “The guy is running 11.90s? That is probably the best look inside his head you can get.” Hey, if Gromer doesn’t like this take, maybe he can follow that wadded up first take out the window onto 24th St. I’ll even send him a parachute. ●

**Wild graphics feature a hellacious ram’s head on the hood and an artsy scene on the underside for the air cleaner to appreciate.**



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# THE STREET RACERS

**Late-night exploits put the final icing on the legendary Hemi cake.**

**BY Geoff Stunkard**

**Photos** by the author, and courtesy of the Wellborn Musclecar Museum, Museum of Motor Racing, and CR Racing Memories (Watkins Glen, NY).

**T**o this point, we have mainly covered how the Race Hemi wrought woe upon organized racing, but before leaving the halcyon days of 1971, a glimpse at where the engine made waves on the boulevards should be made. Truth is, everyone from Tom Hoover and Mike Buckel, with their late-night exploits on Woodward Avenue, to Street Hemi buyers nationwide who chose to breathe on them with race-originated parts, helped the reputation of the motor. Indeed, production of the Hemi was never great compared to, say, the 396 Chevrolets or 428 Cobra Jet Fords, but for those who ran with the night conquistadors, it was always some reputed Hemi car or another rumored to be just one town away, one weekend past.

For more documented examples, one turns to the metro parts of big-city America – New York, Chicago, Detroit,

Los Angeles. Here, it became a money proposition. Perhaps the apocryphal “pink slips” were not in play, but cash was. Sometimes lots of it, sometimes with guns, and cops, and liars, and losers. In Detroit, the most notorious Hemi car was a 1967 WO-type Coronet that Ted Spehar could claim responsibility for, run out of his old Sunoco station, and owned and driven by Jimmy Addison. Powered by a bit of displacement and Spehar’s careful assembly, the car was known as the Silver Bullet. Tom Hoover admits that he no longer needed his street Coronet to defend the corporate reputation after Addison got his Dodge running.

## **BIG CITY, BIG DEALS**

But there were two others who really stood out in Hemi heritage, both African-Americans located in opposite sides of the nation. In Los Angeles, that person was a



6’4” former Green Beret named William Andrew Robinson III, who became known as “Big Willie” after his picture showed up with that tagline in a 1966 expose on street racing in the L.A. Times. That year, following the exploding racial tensions of 1965, the police were surprised to find black, white, Hispanic and other ethnic groups down in the ghetto racing each other for money. They sent a cruiser in to find Big Willie, who hoped he was not in trouble.





Hemi cars and street racing went hand-in-hand; the late Tom Hoover recounted some of his experiences in one of the 1966 chapter sections that ran here in *Mopar Action*

Indeed, he was not. The City Council did not want a repeat of the Watts riots, and convinced Robinson to go undercover as a street race organizer, complete with a paycheck. Having come out of a southeast Asian firefight with serious injuries, living thanks to the courage of a fellow Hispanic soldier, Big Willie wanted peace in the streets, and could look the part with his physical stature (Robinson was a power body builder who actually competed in the Mr. Universe contest).

They gave him all-night access to a boulevard, the assistance of some other officers as “officials,” and let him run the show.

The colors of the Street Racers of LA jackets looked like what the Hell’s Angels wore (most were off-duty cops and city employees), but the kids showed up by the thousands to participate in “the brotherhood” – the surfers, the greasers, the gangsters, and the lone wolves. Dragsters, altered, street rods, low-riders, you name it, it all ran. Two guys would line

up, one winner would collect any money posted fair and square, and the drunks learned early on there would be no hell-raising on Willie’s watch. The morning after Martin Luther King was shot in 1968, Willie and a group of mixed races cruised the blocks of south-central together, telling people to be cool. Amazingly, Los Angeles didn’t burn when other places did. This cannot be laid solely on Robinson, but no doubt his reputation and respect had a calming effect.



Sox & Martin team member Herb McCandless was driving at this match race appearance during 1971, when the car was still lettered for J&B Automotive in Brooklyn, NY.



“The night of the big race, the one people said was for a quarter-million dollars, there were people lined up along the street, thick, for the whole quarter mile.”

So, when a local dealership still had an unsold Hemi Daytona in 1970, the owner came up with the perfect promotion—get it off of his lot and give it to Robinson as a public gesture. Robinson’s wife Tomiko, of Afro-Japanese origin, was given a second Hemi Daytona by another area Dodge dealership. The pair was helped by various California engine builders and parts companies building them up for performance. However, Willie wanted his King Daytona to go faster still, so he took it apart and the body went to AeroChem for an acid bath. Unfortunately, it stayed in the tank a little too long and came up full of holes. “I killed my car,” he lamented. Tomiko, in her still-unmolested Queen Daytona, told him point-blank, “Willie, you are not touching my car!”

However, with their popularity growing and the street racers evolving into an all-night scene at Orange County International Raceway, the couple went on tour nationwide, and the remaining car began to get modified. It went faster and faster, with Tomiko as the pilot and Willie as the crew chief, until she hit a filled water barrel mislocated in the shutdown area of a Knoxville, Tennessee track during an evening event that totaled the rare Dodge for good.

Though in soft focus, young Dale Matthews took this image of the “Queen Daytona” at Great Lakes Dragway as a youngster. He still owns Mopars to this day.

With help from friends in the mayor’s office, Willie would go on to found a race-track on Terminal Island in the L.A. Harbor after Lions Drag Strip closed in 1972. But helping black racers on the streets of Los Angeles were never good political theatre for those climbing into the mayor’s seat, and the track was a political football, opening and closing on and off for decades. Unimpressed by midnight basketball, Big Willie Robinson truly believed in the brotherhood of street racing until his death from complications related to diabetes in 2012.

### \$250,000. EH?

The other team came out of Brooklyn, and was made up of several young men who parlayed money into buying a car to race on Conduit Boulevard. Eugene Coard



The late Big Willie Robinson (l.) with noted parts dealer Jim Kramer, who was an honorary member of the International Brotherhood of Street Racers.



Ronald Lyles was heralded as Pro Stock’s first black superstar in the media. This was the 1971 car updated with a 1972 front end.





was one of them, and he recalls how they got started. This was serious stuff. Equipment came in the Big Apple from drivers like Sox, Jenkins, Harrell and Nicholson. The team Coard consisted of John 'Mutt' Lyles and his brother Ronald, Bennie Durham and Jessie Johnson. The car they ran was based out of J&B Automotive at the corner of Willoughby and Bedford. In late 1968, the so-called "Mutt Brothers" team had an L88 Chevelle, a fast Hemi GTX, and the chance to buy a 1968 Hemi Dart from S&K Speed.

"We bought that S&K Dart for \$6,000," says Coard. "The car had just gotten bounced in tech at Indy. We asked how much, and he told us. We figured it at \$1,000 each and we could sell the Chevelle. A friend repainted it for us. It was a beautiful car, but it was just black when we got it. We also took the GTX and hid it in a garage, so the myth on the street was that we had just swapped that Hemi into this Dart body."

Where the car got infamous was when they had a chance to make some money in a big race against a man named John Edward, who had a worked 427 Camaro that Dick Harrell had built.

"The night of the big race, the one people said was for a quarter-million dollars, there were people lined up along the street, thick, for the whole quarter mile. That was the third time we tried to run that one. The first time, the Dart dumped the driveshaft, so we called it off. The second week, the Camaro broke something when it was started and began to lose power, so we agreed to try again a week after that." The racers also paid the local police \$200.00 for each occurrence, whether the race happened or not, to give them five minutes of time to unload, race, reload, and leave.

"When you street raced, the owners of the cars would get a pot together, and somebody would hold it. Plus there was a lot of side bets that we didn't have anything to do with – there'd be \$20s and \$50s going back and forth. That happened at the track, too."

As with many stories, the pot on the big night grew to exponential levels over the years. "The pot wasn't \$250,000; one writer said, he thought it was \$1250.00, but I'll never forget how much it was," Coard reminisces with a grin. "The pot was actually \$8,000 for that race. It built up during the period of three weeks. Like I said, you sort of had teams, and your team would put the money together for your car. You'd keep a list. So if you bet \$50.00 of the \$2000.00, the pay-off



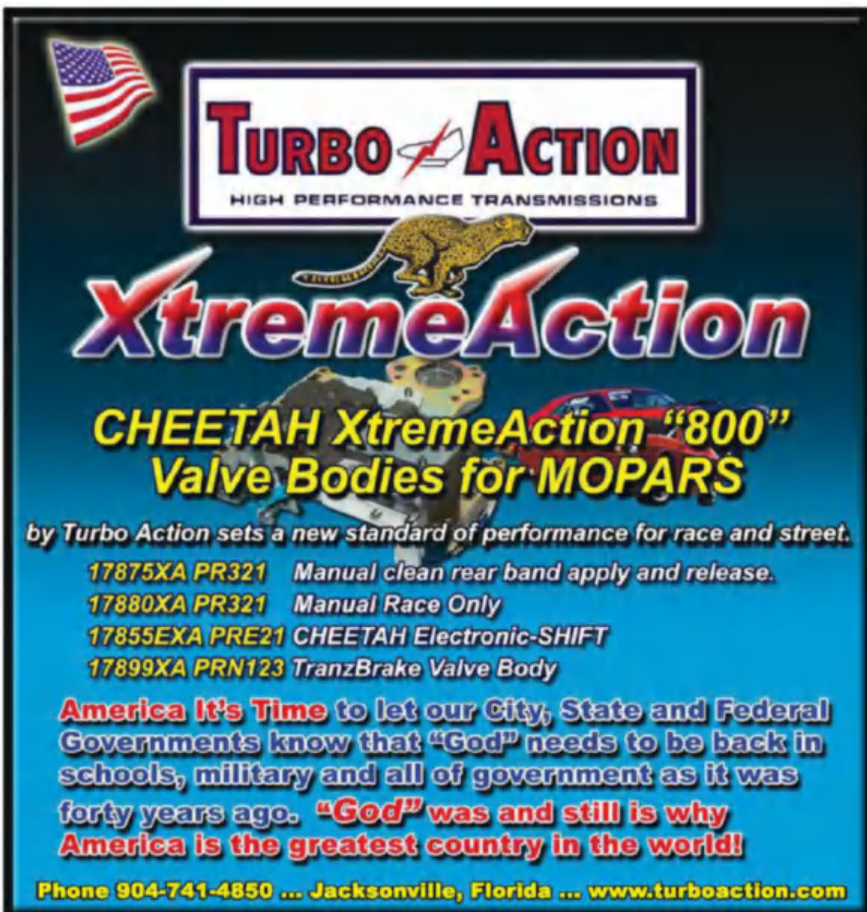
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## → **THE STREET RACERS**

“We used to always keep the car up on the lift, so people could see it had no traction bars, as that was a no-no.”

would be \$100.00. We'd run for \$3,000, whatever. That was parlay money, you just kept using it to race.”

In the final and third big money, John “Mutt” shut down the Edward Camaro fair and square, took his winnings and bought a BSA motorcycle. He was unfortunately killed on it soon afterward, and the team decided they would get a car to run on the dragstrip next. They talked to Buddy Martin and bought Ronnie's 1969 match-race Barracuda, selling the S/K Dart for \$6,500 and buying the old Sox car for \$8,500. Besides, though the Dart never lost a street race, the cat was out of the bag on its origins.

“That lasted about ten months, until after the big race. Then a bus driver from Manhattan came into the shop with a magazine that had a story on the S&K car,” Coard laughs again. “We used to always keep the car up on the lift, so people could see it had no traction bars, as that was a no-no. He came in, looked at it, looked at the magazine, and said, “this is that car.” There was an Army can-teen as the radiator overflow, and it was in the pictures; you could see it from under that car.”

Next, they turned the 1969 Barracuda back in to Sox & Martin and ordered an all-new ride. Once finished, Joe Fisher drove this Barracuda with J&B lettering during 1971, then Ronald Lyles took over for 1972. As the only competitive black racers in Pro Stock, the team proved very popular, netting a magazine cover and numerous bookings plus touring with the new United States Racing Team Pro Stock circuit. Later, they went so far as to build a little Colt for match racing, but Eugene and Ronald would have to hang it up as costs and frustration mounted in the middle of the decade. By then, for them and many other Hemi racers, the end had come. Overrun in Super Stock and over-ruled in Pro Stock during the 1970s, the 426 Hemi would live on in legend. Though it was later revived as a crate motor for the street, its most enduring place would be in the supercharged fuel ranks, where the basic Chrysler Engineering design has never been challenged.

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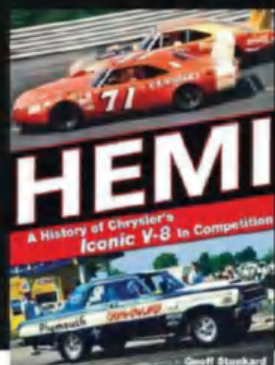
Eugene Coard and his son Allen with the Sportsman-class Duster they built to honor Ronnie Lyles' memory.



## About the book:

**HEMI: A History of Chrysler's Iconic V-8 in Competition** (ISBN 978-1-61325-188-1) has been released by CarTech books this past July. Author Geoff Stunkard tracked down both many rare photos and parts for the book, which is hardbound at 196 pages in its first printing. The formal description is here - Whether the 426 Hemi was installed in a Dodge Charger Daytona or a Super Bee, in a Super Stock Plymouth Barracuda or the Road Runner-based Super Bird (or any number of other cars Chrysler built during the musclecar era), this engine dominated

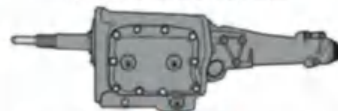
the competition in NHRA, NASCAR, and other forms of racing. From fuel dragsters and funny cars to aerodynamic efforts and stillborn experimental engines, this volume provides a fast-paced and profusely-illustrated narrative on the Hemi, its noted drivers, and its potent forms, including versions used in drag racing, factory experimental,



Bonneville, circle track and even on the street. Drawing from a variety of material sources as well as individuals including racers like Don Garlits and the engine's actual developer Tom Hoover, the book recounts the effort to win on Sunday and sell on Monday while dealing with technical challenges, sanctioning body politics, and brave new ideas. It also includes introductions from the engine's earliest origins to the current era Challenger Drag Paks. Learn why HEMI became a four-letter word to its opponents, and a hot rod legend that lives on even decades later. It is now available at major book retailers or through CarTech. 🏆

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BASE SWIMMER DEPT.

# RED



Barracuda came from the factory in Limelight. Plymouth was in rough shape when Carl bought it.



# FISH



**STORY** · Al Dente

**PHOTOS** · TheBruntBros



**1970  
BARRACUDA**  
gets a new  
lease on life  
in Viper drag.







## Mr. Mustang felt pretty cool tooling along in his new Saleen. Look, up ahead—a red 'Cuda. Guess I'll show him my tailpipes like I've been doing to the other poor slobs that I've been having a field day with.

I'll just pull up beside him, rev my hot V8 and take off. Hmmmn ... he's just rolling along in the middle lane like he didn't notice. Guess I'll try it again ... fall back, pull alongside, vroom, vroom and punch it. Hmmmn ... still no reaction, maybe he's texting or something. I'll give it one more try and then I'll look for a Camaro to play with. Fall back, pull alongside, vroom, vroom and ... what the?

Carl Bischer, behind the wheel in his Viper red '70 Barracuda was pretty much minding his own business when Mr. Mustang pulled up and decided to act like a typical Ford azzhole. Carl let the Mustang slide on his first two attempts to goad him into a "contest." The third time's a charm.

This time when Mr. M pulled up and looked over, Carl put the 440 to the test and walked all over the Blue Oval. After he proved his point and slowed down, the 'Stang driver rolled by, his head down and looking the other way.

Carl normally isn't the street racing type. He built his Barracuda for show and as a weekend driver. "Sure, I let it out now and then," he says, "but I do that when no one is around. I don't look for trouble." We guess it looks for him.

The base model Barracuda story started in 1998. Carl had been looking for a 'Cuda in the Fresno, Calif. area, but couldn't find one. Then one day, he happened to be at his local tire shop getting his tires rotated

(something E-booger highly recommends). Carl was bemoaning the fact that he couldn't find the car of his dreams, and the tire guy stopped from tightening the lug-nuts, looked up and asked, "why don't you check out the Fresno Bee?"—a local paper. So that's what Carl did, and whaddya know, there it was in black and white—an ad for a 1970 Baccaruda. Carl dialed up the number. Busy. He called again 5 minutes later and got through. The car was located one block from where he worked. Figuring it didn't pay to wait for something closer to show up, Carl few out the door (good thing he wasn't on the second floor and exited the window). He ended up beating out 15 other guys who walked out their doors. The 'Cuda was in running condition, so Carl and the seller drove to the bank where Carl forked over the dough. When they returned, five new guys were waiting (guess they decided to have breakfast before moseying over).

The 'Cuda showed a Sept. 30, 1969 build date, making it one of the very early ones produced. Carl said the car was "rough," and had one quarter loaded with



Plain rear valance looks kinda naked when you're used to seeing the usual 'Cuda through-exhaust.







**Date coded 440 is mildly worked and puts out an estimated 400 horsepower.**

a ton of Bondo after an altercation with a guard rail—nasty things, those. Under the hood was an incorrect 360. It ran but indicated serious carb problems. On top of that, the low oil pressure barely registered and the exhaust smoked like a chimney. The interior pretty much had it—cracked dash, broken console, carpet that looked like something swapped out of a dog kennel, and the gauges didn't work. Not pleasant, but Carl was happy. He started on a project that would last 3 years—something he said that he thoroughly enjoyed. "It was like therapy." We guess some folks might think sleeping on a bed of red hot nails, or trying to find Mopar Action on the newsstand (more or less the same thing) as "therapy." In any event, restoring the 'Cuda probably was a good break from his job as

a general contractor specializing in glass (OK, readers, you can send in all your "pane in the azz" jokes. We'll print the best one, and award you with an all-expense paid 7-night vacation at a 5-star bunker in Aleppo, Syria).

That off our chest, the first thing to go was that clapped out 360. Carl came up with a '70 date code .030-over 440. He upped the horsepower ante with some porting, valve work and a purple cam. On the intake side is a jetted 800 cfm Edelbrock on an MP manifold. Stock exhaust manifolds flow into a TTI system. Carl estimates about 400 ponies on pump gas. Carl and his buddy, Kenny, rebuilt the trans and checked out the 3.23 Sure-Grip which was in good shape. Carl handled the metalwork and primed the body, and then it was off to Willy's Auto Body for a stunning 2001 Viper paintjob.

The interior was polished off with upholstery from Legendary. The crappy dash was shipped to Just Dashes and it came back just fine. Carl spruced up the undercarriage, keeping everything stock but upgrading to one-inch Hemi torsion bars and better quality brake pads and shoes.

The 3 years went by in about 3 years, but it seemed much sooner with Carl having such a good time and all thrashing away inside his home garage. It was time for supper when Carl finally turned the last fastener and buffed off the "Barracuda" emblem, and he had some appetite. Some

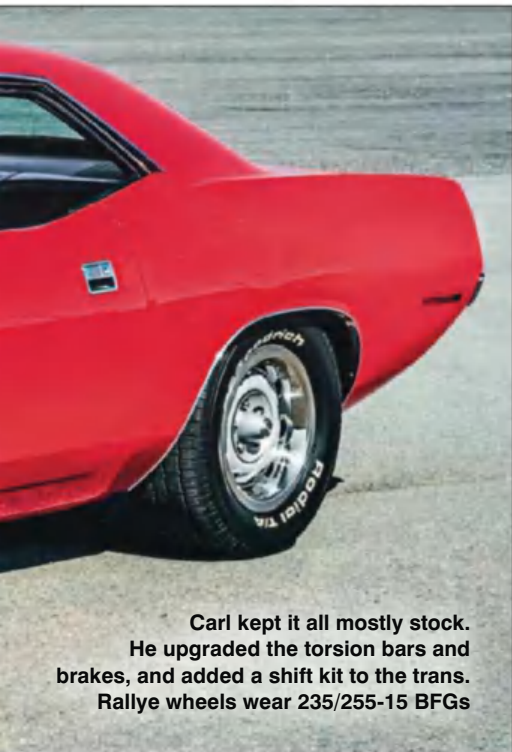


**Car is equipped with A/C, radio, power steering and brakes. Just Dashes redid the dash and Legendary supplied the custom upholstery with a cool red bead.**

guys just can't stop once they get going.

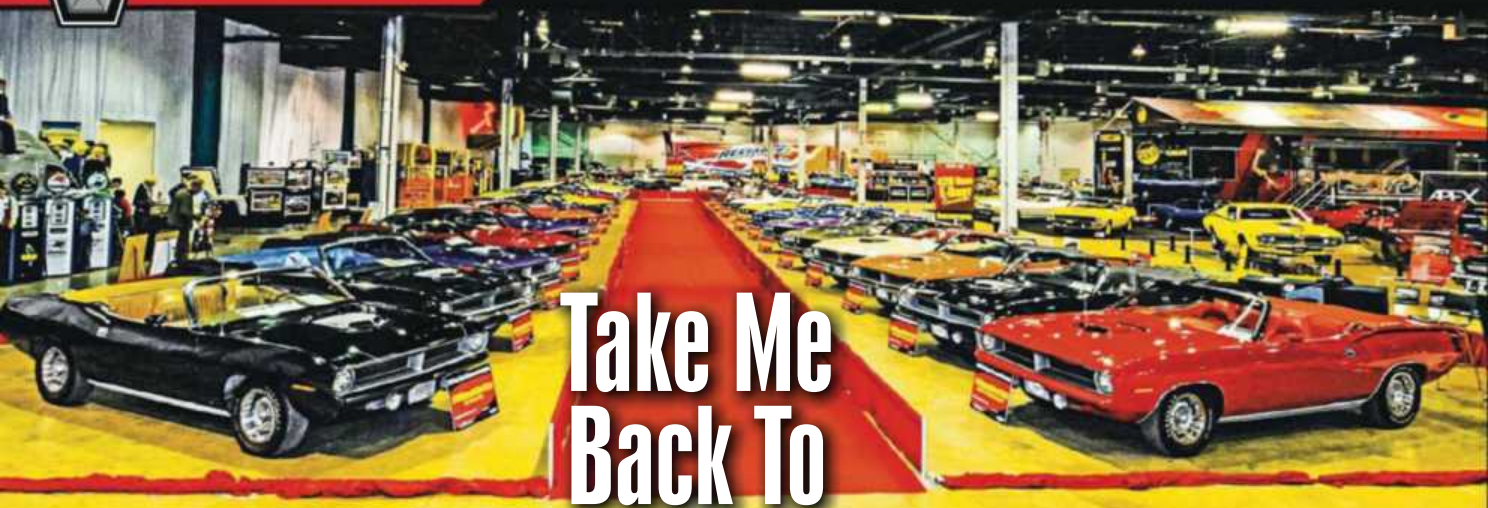
Originally, Carl was just going to use the car in the rain, snow and salt to save wear and tear on the family bus. Changing his mind, he decided to treat it more kindly and keep

it a fair weather driver. Carl's first car show with the 'Cuda was in '03 at the San Joaquin Valley Mopar Fall Finale in Fresno. Carl is president of the non-profit club and they put on this show to raise money for worthy causes such as "Wounded Warriors." His second show was the big Spring Fling event where he took First Place beating out some nifty high dollar iron. Carl's snow tires for the 'Cuda currently are on Craigslist. 🖤



**Carl kept it all mostly stock. He upgraded the torsion bars and brakes, and added a shift kit to the trans. Rallye wheels wear 235/255-15 BFGs**





Take Me  
Back To

# CHICAGO

**Another home run for the Corvette & Musclecar Nats with the largest assemblage of '70-'71 Hemi E-body convertibles since the Big Bang.**

*Story & Photos By Geoff Stunkard*

**T**he colder-weather season that started in mid-October used to spell the end for most car shows north of the Mason Dixon line.

That paradigm has changed in more recent years due in large part to a singular event that is hosted in its entirety indoors. The Muscle Car & Corvette Nationals has become a major part of the yearly Mopar show schedule as so many terrific machines show up for the first time here. Moreover, as we already knew ourselves, these premier examples from the likes of Hamtramck and St. Louis can more than hold their own in a sea of Brand X iron. There are a number of reasons why this remains true year in and year out.

First of all, MCACN is a privately-funded show, but MCACN Managing Member Bob Ashton is a noted Chrysler fan. While he would readily admit it is not his singular effort that makes things happen, we would be wrong to assume the event would have the same caliber without his hand on the tiller. Ashton was the one who came up with the idea of



**Shakers, hot colors and a chance to truly note that each one these cars is almost unique in options and combinations left onlookers saying "hey, I could've had a Hemi the way I wanted it!"**

gathering all the Hemi-powered E-bodies for the 2015 event, and the resultant collection left attendees awestruck at its magnificence.

That brings us to the second part of why MCACN works. Unlike putting a field of priceless cars in a field near a race track, the whole event is held indoors with laid out aisles and solidly railing protections. As a result of this care, cars come from collections nationwide that rarely if ever would be shown in a public setting. The aforementioned convertibles were but a small part of what was on hand in 2015. Whether you like horsepower or oddballs, vintage as-found survivors or world-class restorations, you will always find something that meets your interests at this show. This year, what was "common?" Err, how about E-body droptops, Hemi Daytonas, final production example super cars, and more.

The final touch is that the invitational nature of the events means only the best are on hand. You are not looking for a needle in a haystack when it comes to



The big deal in 2015 was the stellar and likely never-to-be-repeated gathering of Hemi E-body convertibles. Cars came from around the nation to be part of this group, whose estimated value was placed somewhere above \$40 million dollars. We've come a long way, baby.

authenticity or rarity. In fact, even owners of the most significant cars are humbled by the other iron that arrives at the Donald E. Stephens Convention Center in Rosemont, Illinois, literally five minutes from O'Hare Airport and far from the chaos of the city. It is a meeting of equals in many ways, even if the billionaires still keep the millionaires in check.

This year, Ashton and his group had to deal with a taste of wintry weather, but that did not stop attendees from making their way into the cavernous facility for two days of enjoyable musclecar appreciation. As always, there were special groupings of cars, and in addition to the droptop milestones, Mopars appeared in the Class of '65, the Class of '70, the Post Coupe Invitational, Barn Finds, Vintage Certification, the FAST display and in the booths of many restorers businesses. Hemi and Six Pack machines were almost commonplace here, and each car had its own story.

The gathering of 27 of the 39 existent Hemi E-bodies created in 1970-71 will be recalled years from now. The logistics of gathering this number of these cars was monumental, assisted in no small part by a number of owners being willing to have more than one on hand. There were 24 cars in two rows, then Frank and Dana Mecum had three more in a huge display of rare muscle being offered at auction in January. Mecum's ring of power included other Hemi E-bodies, two Six Pack E-body pilot car convertibles, and a 1969 R/T convertible that had once been part of the Otis Chandler holdings.

The next big deal was debut appearances of the only 1972 Six Pack Road Runner built, a sunroof-topped thriller introduced by Mark Sekula and Magnum Performance, and the final 1971 Hemi Charger constructed, restored to perfection by Andrew White of Apex Auto Restoration. American Musclecar Restorations' Mike Mancini did not have a 'final example,' but brought in a fresh '71 Hemicuda, and John Balow of MCR had a hotly-modified 1969 Super Bee as eye candy in his booth. Non-restoration shop displays included things like more fresh E-bodies courtesy Tim and Pam Wellborn, a Hemi Daytona and similar

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Most significant Mopar debut was the Brothers Collection newest acquisition, the only 1972 Six Pack Road Runner ever built. Heavily optioned with things like a sunroof and chin-only spoiler group, this amazing car restored by Magnum even featured a trio of unique original carburetors that were possibly used by Chrysler engineering for emissions compliance testing.



**“The ‘Classes’ fields featured many Mopars as well – from 273 and 340 A-bodies to Hemi and 440 deluxe cruisers. ”**



Among the Hemi convertibles was one the Behrens family brought in, which had not been seen in the collector's hobby in many years after owner Cy Behrens got tired of knuckleheads asking when he would "restore it." His daughter Jordan did some caretaking here, and the car, known to E-body aficionados as the "Unicorn Hemi," honorably anchored one whole row of iron of million-dollar iron.

black 1970 Charger R/T in the Hagerty booth, and late models courtesy Performance Group West and Denny Guest's South Oak Dodge.

The 'Classes' fields featured many Mopars as well – from 273 and 340 A-bodies to Hemi and 440 deluxe cruisers. One of the top-scoring cars in judging – a Platinum Judges Choice for 996/1000 points – went to the 1965 273-inch Dart Charger of Sweden's Ulf Anderssen. This rarely-seen model was restored with many NOS parts and even featured correct factory white wall 1965 tires. Ulf has toured with the car this past summer, flying in from Europe several times, but had no idea it would become so visible in a sea of much more, shall we say, dramatic cars.

The Barn Finds Hidden Gems selection was also heavy on Mopars this year, including two Super Birds, a Six Pack Road Runner, a '70 Barracuda with accumulated debris from the garage it had been stored in for decades, and a 1971 Swinger looking for a new home. However, Frank Badalson had a Chevy there. WHAT? Yes, the Mopar parts expert had the former Lee Harvey Oswald 1955 Chevrolet wagon on hand as a warning to others. Assassins don't kill people; Chevys do.

So we can only say so much before your eyes glaze over. This is an event worth attending. No, it is not just Chrysler products, but what does come to MCACN often only comes to MCACN. No other annual venue offers the protection

and pedigree this one does, and for the admission fee you get to come and see the truly legendary cars of the American muscle collector car hobby. Hotels and restaurants are all within walking distance, saving parking, rental or cab fees if you shuttle in from the airport.

Anyhow, we did not ask Ashton what he was planning for 2016; we know beforehand that it will be both magnificent and surprising whatever it is. Don't miss it another year...

**NEXT YEAR'S EVENT:**  
**Muscle Car & Corvette Nationals**  
November 19-20, 2016,  
Donald E Stephens Convention Center,  
Rosemont IL, [www.mcacn.com](http://www.mcacn.com)





This is Ulf Andersson's high-point 1965 Dart Charger. The little beast, optioned with a 273 engine and many NOS parts, was restored in Sweden, shipped over earlier this year in a container, and won awards at several events in the States. We'd say a 996/1000 against some of the toughest judging in the musclecar world is pretty good....actually, GREAT.

**“This is an event worth attending. No, it is not just Chrysler products, but what does come to MCACN often only comes to MCACN.”**

Noted collector Tom Lembeck, who also had iron in the E-body convertible display, had his black Hemi Daytona in the Hagerty Insurance display, where he pointed out some details to a couple of friends from England.



## PETTY 43 JR. BARRACUDA

**A**mong the smaller displays was Ron and Rich George's Barracudas from 1965. One was a 5800-mile original Formula S time capsule, while the other was the original Richard Petty 43 JR 426 Hemi drag car built to replace the one wrecked in a tragic accident early in the '65 season. Petty's Garage restored the race car and were

also on hand with the museum's show car Super Bird and a plethora of parts from racecars for sale to Chi-Town fans.

As many readers are aware, King Richard drag raced only briefly during the late 1964-mid 1965 boycott of the NASCAR series by Ronney Householder, head of Chrysler's racing programs. The first car was a match-race beast named Outlawed

that Petty raced at the 1965 AHRA Winter-nationals that January. On February 28, the car had a suspension failure and flew into the spectator area, killing a boy. The team regrouped from that, and built a second car which Petty would race the rest of the season, though appearances were few after the Hemi was allowed back into NASCAR in July. Subsequently raced in bracket events, Ron had the chance to buy it over a quarter-century ago in worn but documentable shape. His passion was really for the street designs, but he jumped at the chance when the Petty's Garage shop agreed they would restore the car for him. Buco bucks later, it made its first traveling appearance at the 2015 Thunder Valley Nationals in Bristol, where Richard had won class 50 years earlier. Ron also spent time talking with people about the rarity of his all-original 1965 Formula S, complete with a single chrome exhaust tip, solid lifter 273 Ho-Po engine and nicely preserved finish. It was a cornerstone machine at MCACN, located right near the entrance. Pretty cool.



The Petty camp featuring the 43 JR. drag Barracuda and the Petty Museum's noted tribute #43 wing.





1

1. Author Ryan Brutt, whose new book *Amazing Barn Finds* is chock full of Mopars, replicated the way he had found Paul Rubeck's 1970 Barracuda, complete with a full case of 1970s beer in the passenger side footbox area and a worn plastic laundry basket holding the hood open.



2

2. In addition to the NASCAR stuff that came in with the Petty crew, out of South Carolina was the Cotton Owens display featuring the 1964 Polara that Cotton built as a tribute over a decade ago and a more recently completed 1966 Charger. Both of the original versions of these cars are gone. In 1966, the Charger won the Grand Nationals title with David Pearson driving.



Not everything is completely exotic here; for instance, who wouldn't find this real 426S Street Wedge 1964 Polara convertible owned by Brad and Claire Katzung a winner?



The Wellborns brought in a number of E-bodies this year, with two seen here along with Len Grimsley's hot yellow Six Pack coupe.



The Vintage Certification area was busy all weekend, with several unrestored cars up for judging and analysis. Robert Orr's AAR 'Cuda is on the lift.



Among the ring of amazing muscle at Mecum's truck was this one-of-four Hemi four-speed 1969 Coronet R/T convertibles, and the only one built in this green-and-white combination.



Making its debut among the Class of 1970 entries was the Hemi Road Runner convertible just completed by Dennis Kohr and Kohr's Customs for owner Rod Neviraukas.



# THE FINAL HEMI CHARGER

**A**t last year's historic musclecar auction in Kissimmee, Florida, by Mecum, Tim and Pam Wellborn had sold a number of notable cars from their collection. Among them was a hot 1971 Hemi Charger R/T, the last Hemi Charger built. A couple of other wanna-be vehicles had purported to be trying to get that title, but the highly-optioned Wellborn car was documented with a letter from Chrysler as the last

Hemi Charger to leave the factory, with original paperwork showing a build date of July 30th, the last day of Hemi production and further confirmed as the final car through Prove It auto research conducted by David Burroughs. The numbers-matching four-speed car was already very presentable in mostly original form, but its new owner, collector Darryl Wischnewsky of Texas, wanted it near perfect. To that end, he

gave the car to Andrew White at Apex Autosports, who brought the FY1 Top Banana package to a spectacular re-appearance during the Saturday unveilings. The Charger was across from the E-body convertible display area but had a steady stream of onlookers throughout the event despite those millions of dollars' worth nearby. White may have just raised the bar on how nice a '71 car could be done.



Unveiling the final Hemi Charger on Saturday morning at MCACN.



Just case you thought you might get away, on hand was this '65 Newport four-door police car, complete with 383 4-Bbl/4-speed driveline and a long list of special police options.



MCR's super-trick Super Bee was at the end of one aisle, and owner John Balow also had a couple of other Mopars on hand.



Among the things you won't see every day are petrified mice in Super Bird fender scoops, like this 3400-mile barn find featured. After Michael Angelucci spent 25 years just trying to get a look at it, the owner finally agreed and then sold it to him, but a whole barn wall had to be removed to get it out. Hey, you never know what will turn up at MCACN.







# TRICK OR TREAT

***We put the new cylinder head from Trick Flow to the test. Do they pass?***

**Story & Photos By Andy Finkbeiner**

It wasn't all that long ago when your only choice for increasing flow numbers (and HP) meant shelling out big bucks for a well-used pair of Max Wedge heads, or laboriously porting some swapmeet 906s. Then, a few decades ago, things began to change: Dave Koffel released his all-out B1 race heads, and Russ Flagle's Indy Cylinder Head introduced what has grown into virtually a full line of big-block heads, from mild to wild, with an equally wide array of manifolds. Fast forward another decade or so, and street heads were added from Edelbrock (who now offers two versions) and 440 Source (who now offers a CNC-ported version). All of these heads (and several other lesser-known varieties) are aluminum alloy, reducing your Mopar's engine mass, right where it counts, up front, and up high, and are easily repaired. Everything was (finally) coming up roses for Mopar guys.

Into this crowded field, Summit Racing's Trick Flow division announced their all-new CNC ported big-block heads back at the 2014 SEMA show, but the heads didn't start to ship until September of 2015. We had a feeling that these heads would be the next big deal for Mopar guys so we elbowed our way to the front of the line and grabbed one of the first set of heads that Trick Flow shipped.

As soon as we got the heads in our hands we knew that Trick Flow

**Our set of Trick Flow heads are mounted up and ready to run on the 470 inch B block stroker engine.**



**The 470 low-deck alive and on the dyno. We were able to get a handful of shake-down runs on the new engine before this article went to press and we're happy to say that we've seen 590 ft-lbs of torque and 660 hp. We expect those numbers to increase as we get the new combination tweaked and sorted out.**

was on to something special. The CNC porting work looked great, and the numbers from the flow bench backed up the good looks. Peak flow is right at 330 cfm on the intake side at 0.700" lift while the exhaust flow is 260 cfm or 79% of the intake flow. Those numbers are good enough to support an easy 650 hp given

the correct cam and that is a big enough number to put most any Mopar into the 10s at the local dragstrip.

Trick Flow offers the heads with several different spring combinations but we wanted to build up a fairly serious bracket type engine so we went straight to the bottom of the page for the version with the solid-roller-capable springs. This version of the head is capable of handling 0.700 inches of valve lift right out of the box and has lightweight titanium retainers to reduce the odds of valve float.

Once we had the heads in hand we needed to build a short block that could handle the power capability of the heads. We settled on a classic 470 inch low-deck stroker engine (400 block with a 3.91 stroke crankshaft) but decided to go with a pump gas combination so we could drive to the track and make passes without spending a fortune on race fuel. The Trick Flow heads





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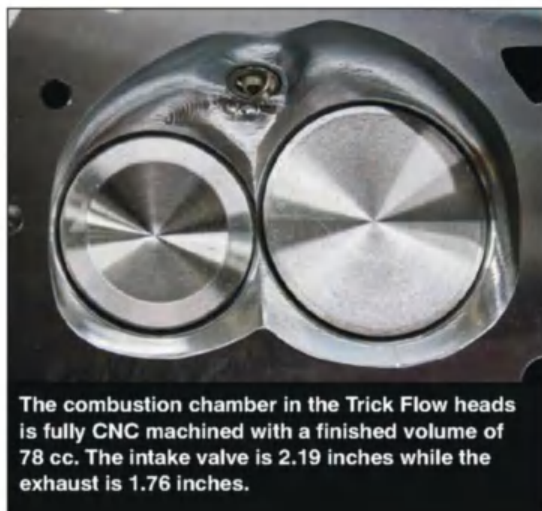


have a smaller-than-stock chamber at 78cc so the pistons require a small dish in order to work with pump gas. Fortunately, there are a lot of piston choices these days and we found a shelf-stock piston from Diamond Racing that fit the bill. Scat Crankshafts was super helpful in building us one of their fully machined Superlight 'shafts as well as providing a

set of lightweight I-beam rods for the build. Our friends at Holley suggested using one of their brand new Ultra XP 850 carbs for this engine while the guys at Jesel talked us into one of their new front drive combinations with a belt driven camshaft and a belt-driven distributor.

As we got into the engine build we came to the conclusion that there was so

much information to cover on the topic that we decided to split the project into multiple articles with the first article covering the heads and engine build, while the next article will follow up with more details on the camshaft and induction system as well as the dyno testing. Having said that, let's jump straight into the pictures of the engine build. ▶▶▶▶▶▶▶▶



The combustion chamber in the Trick Flow heads is fully CNC machined with a finished volume of 78 cc. The intake valve is 2.19 inches while the exhaust is 1.76 inches.



The rocker shaft is relocated higher on the Trick Flow heads by roughly 5/8-inch in order to provide more room for longer valves and valve springs. We took a quick look at the resultant geometry with various rocker arms and came to the conclusion that the shorter rocker arms such as those from Crane (right) and Comp (l.) would be our first choice.



The ports on the Trick Flow head are fully CNC machined. This view of the exhaust port shows the fairly large step over that Trick Flow uses in their CNC machining. The spark plugs are angled similar to Edelbrock or Indy heads.

We began the engine build with a standard bore 1978 400 block. This block passed all of our inspection tests including checking for cracks and sonic checking the cylinder walls. The story that late-date B and RB engines have thinner walls is just that: A story.



The block was carefully cleaned and fully deburred. The oil pump pickup was drilled and tapped for the larger 1/2 NPT pickup size (do this with extreme caution, the boss is cast smaller than on Hemis). We called Hughes Engines and got a set of their chamfered main bearings for this engine.





SCAT has recently added a lot of new Mopar stroker kits to their catalog. SCAT didn't have a 3.91-inch stroke crankshaft in the catalog, but they were more than willing to whip one up for us. We went with the Superlight option for this crankshaft along with a set of 6.700" long SCAT I-beam bushed rods and Diamond pistons with full-floating pins.

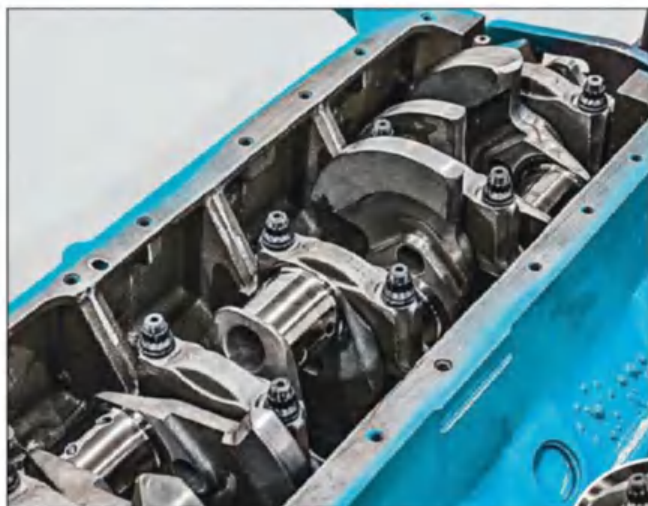


The SCAT Superlight crank is rough balanced but we needed to dial it in once we had all of the other parts. Finished bobweight for this rotating assembly is only 2222 grams - over a pound lighter than an OEM 440!



The SCAT Superlight crankshaft only weighs 54 lbs. so it is easy to drop in place. We used an ARP main stud kit to provide a little extra clamping force on the main caps.

Once the crankshaft is in place and everything is torqued to specification we measured the crank end play to make sure that the thrust bearings are correct.



**ABOVE:** A close up of the SCAT Superlight crankshaft shows the fully machined counterweights as well as the gun-drilled mains and the hollow rod journals.

**RIGHT:** We have been using the billet rear main seal retainer from Mancini Racing for many years with excellent results. Installation is fairly simple and we haven't had one leak yet. Indy offers a similar setup, there's no reason today to use the crack-prone stock cast retainer.



Once the crankshaft is fully secure the piston and rods can be knocked into place using a ring compressor and plenty of lube. Of course a bore-size-specific ring compressor, or even the wrinkle-band type, makes this job easier.







Rod side clearance is double checked after all of the rods are in place. This engine has extra side clearance since it is using Chevy width rods on a Mopar width crankpin, this might well result in increased oil consumption on a pure-street engine (which this isn't).

**BELOW:** The pistons are Diamond part number #52407 with a 12.5 cc dish. At zero deck with a 0.040" thick head gasket the compression ratio is pump gas friendly at 10.6 to one.



The block was decked 0.005 inches to provide a deck height of zero (i.e., the tops of the pistons are flush with the deck surface).



**LEFT:** The Jesel belt drive front cover provides a double thrust bearing arrangement for controlling camshaft end play. The belt drive also provides an easy way to adjust the camshaft centerline. Also note the clever square-recess ARP crank-snout screw, this belongs on every Mopar buildup.

**RIGHT:** With the belt drive installed, the next step was to screw in the head studs and then double check the fit of the Cometic MLS head gaskets. The center row of head studs needs to be longer than with cast iron heads since these Trick Flow heads are taller than stock. We used a row of 5.0 inch long head studs for the center row.







Once the head was installed we were able to order the pushrods and then verify valve operation. Gross valve lift with our 0.460" lobe camshaft and the 1.50 rocker arms was just a little over 0.690 inches. Rocker arm geometry appeared to be just fine at this lift.



One additional advantage to using the Jesel belt drive is that a belt driven distributor can be added which is driven off the front of the cam. The belt drive distributor eliminates the friction, slop, and harmonics of the camshaft gear drive. Note Meziere electric water pump (another track-only part).



The ignition is triggered by a flying magnet wheel bolted to the vibration damper. This crank trigger type of ignition system was pioneered by the Mopar Missile crew back in the Direct Connection days (Think: Huntsville, Apollo 11, Chrysler Engineered)

The oiling system is all Milodon including the #31010 deep sump pan with matching pickup and windage tray. A standard windage tray fits just fine with a 3.91 stroke crank when using the Shivvy 2.200" rod journals.



The oiling system is completed with a Milodon #21814 billet pump and a System 1 screen type filter. The screen filter allows us to quickly examine the filter element between dyno pulls to see if the engine is generating any debris.



The induction system consists of a Holley 850 Ultra XP carburetor mounted on a proven Victor 383 intake manifold. (Remember, double-pumper carbs such as this are only for race use). We'll also be testing a Holley 950 carb as well as a Mopar Performance intake. Trick Flow has announced a new intake manifold but it isn't available yet. Once the Trick Flow intake is available we'll be the first to test it.



## Sources:

### DIAMOND RACING

Clinton Twp, MI, 877-552-2112  
www.diamondracing.net

### HOLLEY

Bowling Green, KY, 866-464-6553  
www.holley.com

### GRAY'S AUTOMOTIVE

McMinnville, OR, 503-620-4353  
www.graysengines.com

### JESEL

Lakewood, NJ, (732) 901-1800  
www.jesel.com

### MILODON

Simi Valley, CA, 805-577-5950  
www.milodon.com

### TRICK FLOW

Tallmadge, OH, 330-630-1555  
www.trickflow.com

### SCAT CRANKSHAFTS

Redondo Beach, CA, 310-370-5501  
www.scaterprises.com





Darrell has owned four '54 Belvederes, one of each body style and one of each color. He picked up this '54 Belvedere convertible years ago. The 59,000 original unrestored has had only the rear plastic window replaced in the original top. The Plymouth has a factory installed continental spare tire kit that was offered only in 1954.

production record. The SO IDs the body that can be traced back to the serial number. This is a security measure to help law enforcement track cars and at the time track stolen vehicles. The production records in Darrell's books has the SO number blanked out for security reasons.

Darrell doesn't document or authenticate cars, he leaves that to folks like Galen Govier who charge for their services. Darrell doesn't charge for anything (except his books). If you have a question about a Max Wedge, you can call him. He'll ask you to send him photos of your documen-

tation (bill of sale, title etc.) and a photo of how the VIN is attached to the left door pillar. Chrysler used a special fixture for this that went in through the two holes in the VIN tag and spot welded it to the body from the back without blemishing the metal. The VIN also uses two different fonts and Darrell wants to look at that. Then he gets to the numbers. When you get to the all-important SO number, he'll just tell you if the number is correct, he won't tell you what it's supposed to be.

His research also documents cars that he has not published such as Dodge

D501s, 1960 DeSoto Ram Induction cars and 1960 Chrysler 300Fs to document the 4-speed transmission installation. He did partial reviews of the 1958 Plymouth and DeSoto cars built with the Bendix Electrojector system, 1963 Golden Commando-equipped Plymouths and '64-'65 Street Wedge 426 Plymouths but these were never completed. ■

### Source:

**Darrell Davis**  
407-701-4493  
DDavis8839@aol.com

CHRYSLER MOTORS CORPORATION CAR RECORD CARD - 1963									
VIN: 31156775		REGION: 2		DEALER: 30		TYPE: 2		TRIM: 2	
SHIP DATE: 01		POWER & EQUIPMENT		SHIPPING ORDER NO.					
<p><b>SPECIAL EQUIPMENT</b></p> <p>1. AIR CONDITIONING</p> <p>2. POWER WINDOWS</p> <p>3. POWER LOCKS</p> <p>4. POWER SEATS</p> <p>5. POWER STEERING</p> <p>6. POWER TRAILER BRAKES</p> <p>7. POWER FOLDING MIRROR</p> <p>8. POWER FOLDING SEATBELT</p> <p>9. POWER FOLDING SEATBELT</p> <p>10. POWER FOLDING SEATBELT</p> <p>11. POWER FOLDING SEATBELT</p> <p>12. POWER FOLDING SEATBELT</p> <p>13. POWER FOLDING SEATBELT</p> <p>14. POWER FOLDING SEATBELT</p> <p>15. POWER FOLDING SEATBELT</p> <p>16. POWER FOLDING SEATBELT</p> <p>17. POWER FOLDING SEATBELT</p> <p>18. POWER FOLDING SEATBELT</p> <p>19. POWER FOLDING SEATBELT</p> <p>20. POWER FOLDING SEATBELT</p>									

Chrysler tossed all the original production IBM punch cards when they put them all on microfiche. Unfortunately, the poor quality of microfiche prints does not permit satisfactory magazine reproduction. The card, however, can be read on your screen. Check out our website to view the card, for one of Darrell's Max Wedges, in detail, along with a complete decoding.



# Mopar Or Nocar

Edited By Phil DePages

## CRASHBOX CHRYSLER

Dino Gorlinski likes 'em big. We like 'em big, too, but Dino is talking about Mopars. His '71 Chrysler 300 certainly fills the bill on that score. Dino obviously likes 'em fast, too. To that end, he had the 400 rebuilt and fed it with a dual quad tunnelram. And he added two 50mm turbos for good measure. He says horsepower should register in the low 1000s. We won't argue with that. 'Course, that wasn't trick enough for ol' Dino,



so he had a custom A833 Hemi "crash-box" 4-speed installed to bang his own gears. Out back is an 8 $\frac{3}{4}$ " rear spinning a spooled 4.56 gear. He gets the most of his acceleration potential by running slicks. So where does he run? Dino says he drives his Chrysler locally around his hometown of Countryside, Illinois for "pleasure." We'll bet he gets a lot of it—especially against the Mustangs and Canaries.



## Raising Heck

There's not much to a story about a Mo'fan buying the car of his dreams—a 2015 TorRed Challenger Hellcat. But Sonny Morneault, of Thomaston, Conn. doesn't need a story to show off his ride, and the guy here who makes all of them up is on vacation this week. So just enjoy the pic. At least it's in focus. Sonny adds that this pic was taken at a party that a guy in a '70 Challenger R/T SE showed up at. The cool thing is that Sonny's brother-in-law owned that very car 30 years ago when he and Sonny would cruise the town, blowing off Ford and Chevy doors. There's still a pile of them in the weeds.

## HOME AGAIN

In March of 2007, a local eBay listing was posted for a 1966 Plymouth Belvedere II 426 Hemi car, and being a true Mopar fan Steve Berroth from Carlsbad, Calif. jumped on the sale, drove the car and purchased it on the spot. The seller (Bill) was very honest stating that the engine was not the original, but the price was right and the car ran liked a raped ape.

Steve's friends call him the car detective. He never rests until he knows the entire history of a car. His Super Bird took him 9 years to find the original owner and the original dealership.

The Belvedere only took 2 years to find all the names back to the original owner: A



Deputy Sheriff in Billings Montana that used the car as an undercover car while on duty.

In 2009, Steve had the engine out on the stand while he was restoring the body. He decided to research the engine—a '71 Hemi. He researched the owners based on the VIN. One previous owner was Bob Carlson in Montana. Steve called and asked Bob if he ever changed the engine. Bob said he swapped engines all the time to try and get better times on the strip, and during this time ('77-'79) Hemis were relatively cheap. Steve mentioned his Hemi engine and Bob responded, "I always wondered where my engine was." Bob told him that the Hemi came from a '71 Road Runner 4-speed. Steve asked about the beeper and Bob replied "I think it's still under the tarp in the garage where I put it when I pulled the engine."

That day Steve told Bob there were two choices that needed to be made, but the engine and the car had to be reunited.

1. Sell me the car
2. Buy my engine

Bob decided that he wanted the Hemi, and that he had sold the original engine for Steve's '66 to a guy whose name had something to do with cars (Fuel or something) who lived in a strange named town in North Dakota. Not a lot to go on and it was sold 30 years prior. Steve went on the Internet to check out weird names in ND. The top weird name was Beulah. Steve went to the Beulah town website and right there on the front page was town council member Roger Gazur (Gazur-gas? fuel?) A call to Roger hit pay dirt. Steve asked Roger if he remembered buying the engine and where it might be these days. Roger stated "Yes I do, and it's on the same shipping pallet I brought it home on 30 years ago." Roger was working a '67 GTX Hemi project and said If Steve could find him another standard bore block closer to his month/year he could have the engine. It took many months and at least one rip-off seller in PA, but a deal was made and the engines were exchanged. A lot of work but two Hemi cars were finally reunited with their original engines (Whew!) 🍀



Want to see your car, dog, parakeet, or windmill (for Netherlands readers) on this page? Send good, sharp photos, or hi-res digital images of your toys, along with some information that we can bizarrely distort into a story, to: Reader's Rides, Mopar Action and Today's Cat Juggler, Harris Publications, 1115 Broadway, New York, NY 10010, or, even better, submit online at [www.moparaction.com](http://www.moparaction.com). Add 15% gratuity for better service, or invite us to dinner. Don't want to see your ride here? Even easier: Don't send us nothin'.



Continued from page 10

The earlier lockup converters weren't models of reliability. I'd keep it unlocked at anything over half throttle, towing, etc.

## FISHING EXPEDITION

Mr Ehrenberg, I love the MA mag and your tech tips. I'm working on a 1966 Baracuda Formula S. It had the 273 4-Bbl/4-speed. However, I blew that up, so I put in a 318 with same 4-Bbl and 4-speed. Now I have pulled that out and am going to put in a 1978 360 that I rebuilt 3500 miles from my 1978 Dodge Magnum, the car is gone but I kept the engine. The 360 was bored out .30" over with .10-.10 crank and connecting rods, and it has a RV cam. I do have some Questions: (1) How good is the Edelbrock dual-plane 4-Bbl manifold with a 600 Edelbrock carb for this engine? (2) Do you think I should beef up the cam a little, if so, what size? (I'm also putting a set of Heddman headers on this engine). (3) Would there be a problem with putting the 4-speed tranny to the 360 that used be hooked to an automatic? (4) How much HP have I increased with this setup?

— Jeffrey L. Stevens Sr.  
Vancouver, Wa.

Jeff:

So much for one question at a time, huh? Therefore, I'll be brief.

- (1) Not sure which Edelbrock you are referring to, but there are no bad ones. The carb could be bigger, use an AVS.
- (2) "Beef up" the cam? Sure, a good start ing point would be a stock 340 cam.
- (3) Unlikely that the crank is drilled for a pilot bushing. The fix is shortening the tranny's input shaft and using a Magnum V8 pilot roller bearing assembly that pilots on the area normally used by the torque converter, E.g.: Rock Auto P/N FC69907 or Mopar 53009180AB.
- (4) Assuming that the engine was a 2-Bbl, swapping to a good manifold, 4-Bbl, cam, and headers are probably good for close to a 100 HP gain over dead stock. In a 2800 lb. A-body it should rip!

One comment: I don't think you really meant the numbers you quoted for overbore and crank undersizing, if so, it is all now 100% junk!

## DRIVE TIME

Richard, What automatic O/D transmission would you suggest for my '63 Plymouth Sport Fury (440 CID), hopefully without dissecting my floor pan or tunnel?

— Dan Roupe, La Pine, OR

The only overdrive big-block tranny that will fit a muscle-era Mopar with little or no cutting or hacking is the Keisler-re-engineered 4L60E, now sold by shiftsst.com.

Dan:

The choices are rather limited. In fact, it really comes down to one: The modified 4L60E from Silver Sport Transmissions (formerly Keisler). Keeping the pushbuttons, however, would be a challenge. You'd need a modified shifter from Imperial Services (assuming you can coax Steve into building you one.) Even then, I'm not sure how it would work with the extra detent position. Somewhere, I'm sure somebody could modify the pushbutton setup to electronic operation, with a servo controlling the tranny's shift lever — but you are on your own with that.

## BODY DROP

Hi Rick, I'm getting ready to install a 440 into my '69 Coronet. The K-member is out, rebuilt front suspension with disc brake conversion. Expecting the engine from the builder this week, and then I plan on dropping it onto the K and bolting up the TF and installing the assembly from underneath.

Currently the front end is on rollers, 18" to the bottom of the radiator support. The rear end is in, riding on 275/60-15 tire/rim combo. The bottom of the rear bumper is also 18" off the ground. I estimate the height of the engine/K/dolly to be 38" +/- . So that means the front end has to be raised a minimum of 20". I'm way too old to remember HS geometry, but it seems the rear bumper will bottom out before the front is raised high enough. I enjoyed your recent article in MA on this topic but I would appreciate any additional tips and tricks to pull this off.

— Rich Ahrens

Via e-mail: richardahrens@netzero.net

Rich:

Nah, there's not that much rear overhang, it will clear easily. There will be no problems at all, cinch, see pix, at right.

Using an engine crane, there's plenty of room to lift your Mopar's shell to install or remove the powertrain the factory way, and, no, the tail won't drag on the shop floor.



## PLUG IT UP

Swapping a 360 into my '71 Scamp. Will my A-body 318 exhaust manifolds leak on a 360?

— Sean Bolter, Las Vegas, NV

Sean:

No, but they sure will be a "cork."

## SHAKY DEAL

Mr. Ehrenberg, 1967 D100, 318. I swapped my granny gear 4-speed to a 518 OD trans and now there's a vibration around 50 MPH. It was smooth with 4-speed. I had the propshaft fabricated and took it back and they said it was OK but still vibrated. Took it to another shop and they said same thing. I can put in neutral at speed and still vibrates. I read in another tech question there should be about 3/8" of yoke showing, mine has about 1 1/2" showing and I can pull and push on and the yoke moves up and down noticeably. I'm pretty sure this is the problem but another yoke I have shows about the same. Does the 518 have same output size as 727? Also Phoenix in Weatherford, Texas built the trans and converter, I wanted a high stall because of Mother Thumper cam and they said it was hard to get a high stall with this combo but said they should get around







1



2

1. The front edge of the slip yoke should be quite cozy with the tranny's seal boot with the car at rest, not over 1/2" clearance should exist. If it is hanging out in the breeze, expect a bad case of the shakes and accelerated bushing wear.

2. Vacuum advance is there for a reason, Actually, several! I have written about this extensively, so, straight to the point: Omit it and kill fuel economy, dilute your oil, and wear out your rings, and that's just for starters. Any person, shop, or company that tells you that you don't need it for street use simply doesn't understand the physics of internal combustion engines under light loads.

2800 but its only about 1500. They said if I bring the truck back they will see what they can do. Do you think they should be able to get more stall out of it? Truck has 4.10 Dana, Indy 2.02" heads, Ed's RPM intake, Holley 650, Revenator module. Revenator instructions says vacuum advance is not needed, I know, I know, but with timing light as soon as I touch the throttle the timing jumps up perfectly. The truck hauls ass but I need to correct vibration problem and really let it eat.

— Marcus Canon, Keller, TX

**Marcus:**

The yoke should be quite snug, and, at normal ride height, almost touching the boot, roughly 1/2" max clearance. Your 'shaft is simply too short (mine too.) The output bushing is, in all likelihood, now chewed up from the too-short 'shaft.

727 and 518 slip yokes are identical. I suggest measuring the U-joint angles also.

A hotter cam reduces low end torque,

this reduces stall RPM. I assume you tested this at WOT? Any other test is meaningless. Converters can't actually be rated at stall RPM, the spec is a K factor. The same converter - identical - may stall at 1200 RPM behind a 273, and 4000 behind some stroker big block. Really!

A street driven vehicle must have vacuum advance. **MUST.** Unless you wanna give up 5 MPG, dilute the oil, and wear out your rings in 5,000 miles. No matter what type of ignition system you use. End of story.

### HOT CHARGER

Rick, On the way back from a show on a very hot day my '72 Charger Rallye 440 overheated. After checking for leaks



Core plugs come in a bazillion different sizes, one thing's for certain: All steel ones will leak eventually.

I noticed coolant spraying from the passenger side of the motor. I think the core plug failed. Do you have a vendor and part number for the core plugs for factory 906 heads? The plugs in my block are brass, new in 2015. I am having a hard time locating ones for the heads any help you could provide will save the day so I can enjoy the Charger that my dad purchased new and passed on to me before he died.

— Tom Zugehoer, Auburn, NY

**Tom:**

Dorman P/Ns:

555-018 1" (ends)

555-024 1 1/4" exhaust side (or 565-023 brass)

### SUGAR PILL OIL

Dr. E, Just got through reading one of your old lube articles where you stress the value of ZDDP. I have recently used some Archoil lube additive to good effect -



Savvy Savoy is alive and well. Just ask the local ricers who are familiar with this view.

increased my 2014 5.7L Ram's MPG from 20 to 21. Care to comment on their product? Try it if you haven't. My engine definitely idles smoother and has better pickup.

I am missing the Savvy Savoy. Hope you can add something to the mag about your latest adventures with it.

— David Braew, Morro Bay, CA

**Dave:** The only way a change in oil can increase power and/or improve fuel economy is through reduced windage, i.e., lighter (thinner) oil. That's why new cars use 0W-20, etc. Any other change is the placebo effect at work.

ZDDP is only necessary on flat-tappet cam engines, and, even then, once fully broken in, you don't need a whole lot. I'd sure not add extra to a roller cam vehicle.

No doubt the Savoy will be back at some point....stay tuned. For now it is performing as intended, terrorizing local Nip clippers.

### WOUNDED BIRD

Hi Rick, I've been following your great tech series since the mid '80s. Every mod you come up with I try to install in my car. I went to remove the K-member in my '74 Road Runner and the nut inside the frame broke loose. Any ideas on how to fix that? Also on the driver's side rear mount there seems to be about a 1/4" of shims and none on the passenger side rear. What gives? How do you determine the shim pack and do I add shims when I install the K-member with the cast mounts?

— Dan Lachance, Edmonton, AB

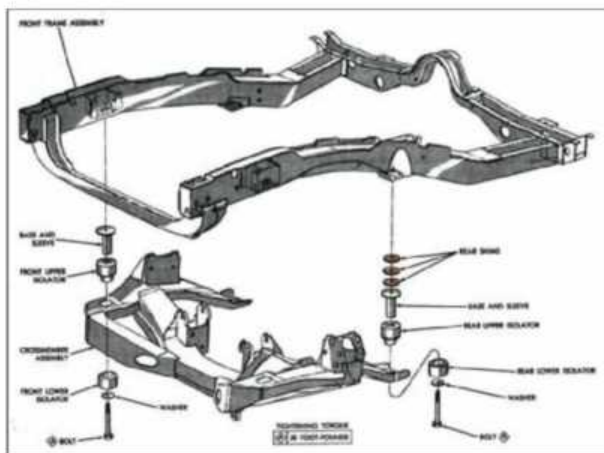
**Dan:**

I guess you missed my advice of drilling a 1/8" hole through the frame (above the weld nut) and soaking the threads with rust penetrant before attempting to remove the screw.

Anyway, the only fix now is to cut a window around the nut area, weld a nut to a plate, and weld the plate over the window.

As far as the shim pack, the question is always: Where's the inaccuracy, the K-member or the longitudinals? Usually the





On '73-up B-bodies, and all R-bodies, selective shims were used at the K-member rear screws. Reader Lachance is swapping to Firm Feel's awesome solid mounts (a great upgrade), if the gap is equal on both sides after snugging the front screws, no shims are needed. This upgrade effectively adds the X-bracing back into the front longitudinals. The difference in road feel, flex/twist reduction, etc., is stunning.

latter, but the K is pretty easy to jig up and measure (equal length spacer — can even be hardwood — block under each mounting point and a flat surface will show you quickly). If the K is OK, I'd let the K, pull the longitudinals into alignment with no shims. But, if the K is warped, then replace the shim pack.

## MANIFOLD MANIPULATING

Hi Rick, Can you give me your take on the Edelbrock DP4B vs Edelbrock Performer on a stock 383?

Car is a '66 Chrysler TC and came with a 2-barrel 383 per the fender tag (assuming this is just the 270 HP 383). In the early '70s, my dad changed the 2-barrel to a 4-barrel Carter 3611S. I'm will be upgrading the single exhaust to TTI's dual exhaust setup and sticking with the log exhaust manifolds.

I was thinking of swapping out the Carter for Quick Fuel's Slayer series QTF-BD-1957 - 600 cfm carb. Along with the QF carb the intake should be changed and forum folks have varying opinions on either of the two.

I have a Pertronix Igniter II with a Flame Thrower Coil that I'll be switching over to as well.

That is all I really plan on doing as far as engine upgrades. I did do a front drum to '73 disc conversion with the Mopar Wilwood prop valve and your master cylinder brake line fittings per your Disc-O-Tech write-up and it works wonderfully.

I recently installed Firm Feel's rear sway-bar which was also a major improvement and hopefully next week will be installing Firm Feel's Tubular UCA.

— Steven Leong

Via e-mail: [sleong58@yahoo.com](mailto:sleong58@yahoo.com)

**Steve:**

The difference, functionally, between those manifolds is very small, a swap

would certainly not buy you much.

*For a carb, without a moment's hesitation, I would go with an AVS (see page 46). I'd not recommend a Holley or Holley-like carb for your application.*

*The Pertronix is a proven system, but I'd still much rather have a '70s-style divorced (firewall mounted) ECU. Why? Imagine yourself stuck a few hundred miles from home trying to find parts, late one rainy night, for a failed one-off aftermarket system. Also no need to swap coils, the OEM oil-filled coil is more than adequate.*

*You are really urinating directly into the breeze with the log exhaust manifolds. Heck, just go back to a 2-Bbl, why don'cha?*

*When you finally tear into it, swap on some 346 or 452 heads, and a bit of a bumpstick.*

## PUMPED UP

I can't recall this ever being a topic, tech or otherwise: when did the octane ratings of gasoline change from MON to the AKI (R+M/2 formula) in the U.S.? I understand that the "R+M" rating gives up 5 points vs. the MON rating (i.e. 105 octane 'MON' vs 95 octane 'R+M'), but why the change?

Makes me believe that the coveted Sunoco 260 (Chevron 'Custom Supreme' on the west coast) was really 95-100 AKI octane .

—John Shoe, Murietta, CA

*John:*

*The change (from RON, not MON) was required as part of the law that required the yellow “pump octane” stickers, this went into effect on April 1, 1979. On that date, I clearly remember Sunoco 260 being posted at 97.5, within a year or so, it was down to 96. When everything went unleaded, Sunoco backed down to 94, then 93 about a decade ago. Both of these products are (were) branded as “Ultra”. Incidentally, Sunoco no longer actually “makes” (refines) gasoline.*

*The pessimist in me says the change was made because of the typical government “consensus” decision-making process. My optimistic side, however, would like to believe that the AKI more accurately reflects real-world anti-knock performance.*

The variation (offset) number that I've always used for rough "in my head" calculations is: Add 4 points to the pump octane (AKI, "yellow sticker") number to come up with a reasonable approximation of the now-seldom-used Research Octane number (the "R" in the R+M/2 formula). This formula can vary quite a bit however, I have seen numbers as high as 6 banded about. BTW, you have your calculations wrong, the motor (M) number is much lower than either RON or R+M/2.

*One thing I can say with some measure of certainty: The AKI is almost always quite a bit higher than the sticker claims. I know that Chrysler has to pay big bucks for “certified” (lab grade) 91 octane fuel for calibration (dyno cell) use, almost all that’s bought at retail is a lot higher. Having said that, I will also say that a local chain in my area has begun selling ethanol-free” 91, mostly aimed at small-engine use (93 is much more common in most of NYS), I tried it in a few cars and it was Detonation City! Still, it might pay to use “E0” fuel for the last fill-up prior to winter storage, this would go some way towards preventing problems such as those encountered by reader Russo (see p. 10).*

One thing's for certain: If the refiners would increase the octane levels gener-

In the US and Canada, “pump” octane, also known as the AKI (anti-knock index) is derived from a simple arithmetical formula:  $R + M/2$ , where R is the research octane number (the once-well-known higher number), and M is the motor octane number (derived by varying the spark advance in a very carefully controlled one-cylinder engine). A reasonable guesstimate of the research number can be had by adding 4, or slightly more, to the pump-sticker number.





ally available, automakers could provide both more power and better fuel economy. Refiners counter that producing higher octane uses more crude oil per gallon of gasoline.

## LEAD ASTRAY

E-Booger, 1991 D-150, 318. My battery recently died. After running a new one for several days, my truck won't crank. I hook up the battery and I get buzzer, lights, horn, etc. but when I turn key to start I get only a click, then all is dead. Disconnect and reconnect battery and the same thing happens. The starter checked out OK on the bench.

— Tom Turner, Marshfield, VT

Tom:

*My gut tells me that one of the battery cable's lugs (terminals) is badly corroded or loose. So...first, remove both cables, and wire brush or scrape the inside of the cable terminals until shiny, then also clean the new battery's posts. Pry the terminals open a bit wider than they were, coat the battery lugs with grease (any kind), install the terminals and tap down (don't go nuts) with a socket and small hammer. Tighten*



Before snugging the battery-cable pinch nuts, be sure to bottom out the lug on the terminal with a socket and a few light love taps.

*the clamp screws securely. Fixed? Great! If not:*

*Have an assistant hold the probes of a DVM to the battery lugs at the center of each post. Should read at least 12V. with engine off. Attempt to crank. If voltage drops down much under 10V, either the new battery is NG or the starter is shorted. If, as I suspect, it stays up, there's a bad connection somewhere between the battery neg and the chassis, or positive and the starter (this problem could also be internal in the battery itself, though rare these days). The DVM can be used to test this, when you find a connection where*

*the voltage is very different on each side, that's the trouble point.*

*This is basic electric troubleshooting 101.*

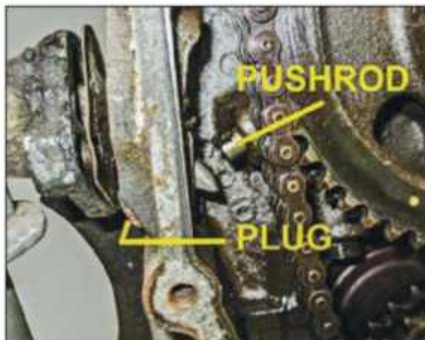
PS:

*Tom replied: Yup, corroded battery cable terminals, loose, too.*

## PUMP PICKLE

Mr. Ehrenberg, I am trying to change the fuel pump on my dead grandfather's 1964 Dodge 880. I took the old pump off with no problem, but I can't get the new pump into place, there seems to be something blocking it. What am I missing?

— Milton Flores, Tucson, AZ



If a big-block's fuel pump pushrod slips down when you remove the pump (which happens 95% of the time), you won't be able to slip the new pump into place unless you either grease up the rod, or manually hold it up. Be sure the crank is rotated so the fuel pump eccentric (on the camshaft) allows the rod to retract fully. The timing cover is removed here to make photography possible. You don't need to do that.

Milt:

*Man, does this bring back memories. I had the exact same problem around 1962, the first time I tried to swap a big-block pump. It was on a 300-F (ram induction), making this job even tougher.*

*There is a floating pushrod between the pump lever and the camshaft's eccentric. It will slide down when you remove the pump, blocking the opening. Depending on the cam's clocking at the moment, you may be able to slide it back up and, while holding it up with a finger, slip the pump lever under it. If the cam happens to be positioned wrong, however, you will have to crank the engine until it can be slid up.*

*The correct way requires slightly more effort but can be easier in the long run. Just below the pump cutout in the block you'll find a small Allen-recess pipe plug.*

*Remove it. The pushrod will probably slide out as you do this, try your best to note which end faced up – the pushrod wears (mates) to the cam's eccentric just as a lifter does to a cam lobe.*

*Coat the pushrod with the heaviest grease you can find and slide it back in. Hold it up with a blunt instrument (nut-driver works well) and have someone crank the engine over, stop when the pushrod is at the top of its stroke (might take a few revolutions to get this right).*

*Replace the pipe plug and install the pump and gasket.*

## BARE KNUCKLES

I have an SSBC front disk brake kit P/N W153 for A-body w/ 10" brakes. I have a 1964 Dart GT w/ 9" brakes. I need to change the spindles to ones from an A-body w/ 10" for the kit to work. Having hard time finding them. Do you know if 10" spindles from a '67 Dart will fit the '64?

— David LeCompte, New Iberia, LA

Dave:

*Yes. Same thru 1972. These were actually used as far back as 1960 — in Australia (and probably South America, South Africa, etc.). In the US, they did not appear until the 10 X 2.25" "V-8" drums were released for MY 1965.*

## FINE CORINTHIAN CLUTCH

Am I on my own for coming up with a clutch pedal for a retrofit of an A833 or a TKO into my 400 CID '76 Cordoba, or perhaps a '74 B-body setup might fit? Wishful thinking here. Of course I'd be going hydraulic.

—Mike Persing, Richboro, PA

Mike:

*'73-'79 B-bodies are all the same basic platform, and manual transmissions were available, surprisingly, thru 1978, even nameplates such as Fury ('75-'78), Monaco ('77-'78), and more-expected models such as Satellite, Charger, etc. Even more surprising, the parts books imply possible interchangeability using '71-'72 parts — many P/Ns are the same '72 to '73. I haven't tried this so I can't verify, but I'd rate the odds as pretty high.*

*Remember, however, that on these cars, several parts do not swap between manual and power brakes.*

*Anyway, find one and scap the pedal assembly. I'd ask the vendors such as Passon, Brewer's, etc. what they have in inventory, or else let the tree-shaking begin.*



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## → TECH TOPICS

### WINTER WONDERS

Hi again Rick, I didn't have the time to get my new crate 408 LA into my truck. As it is salt season here it probably won't go in until late April. It hasn't run since early July when it was broken in and dynoed. What do you suggest to winterize it? And before it goes in again I'd like to spin the oil pump shaft to relube the engine. I'm just not sure of how to do it with the cam drive gear separate from the distributor.

— David Sperry

Via e-mail: dbsperry@sbcglobal.net

Dave:

Since it is out of the vehicle, my usual advice about stalling it by fogging WD-40 through the carb. Best advice is to simply seal it up tight, intake and exhaust.

Priming the oil system won't really be necessary, but if you must, remove the drive gear (twist with large screwdriver) noting which way the slot was facing. Buy a hex primer shaft and insert, chuck top into electric drill. On a SB, run the pump clockwise. To do a thorough job, slowly rotate the crankshaft while running the drill, if you do this, however, you'll have to re-index the distributor gear when you reinstall it. Here's how: Rotate to TDC #1 cyl, then install the gear so the slot is facing the front left manifold screw. Then the usual caveats about ignition timing, compression stroke, etc. apply.

Also, be sure you have drained all coolant, there are pipe plugs at the bottom of the water jacket on each side of the block. ♦

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# Cool Stuff

Edited By Phil DePages

## REAR BEEF

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entials, rear covers, leaf spring perches, brakes and more. The S60 rear assemblies come standard with 35-spline Strange alloy axles and Spicer gears. Every unit is assembled in-house by Strange's experienced staff. For more info, call 847-663-1701 or browse 'em at [www.StrangeEng.net](http://www.StrangeEng.net).

## END GAME

**W**e don't have to tell you what happens when you have lousy door end cap filler seals, it's just too grisly to describe in a family-oriented magazine. You can forgo the misery of missing or degraded seals by calling the folks at Metro Moulded Parts. They've just released all new Door End Cap Filler Seals for 1971-72 Dodge Demon (340) and 1970-72 Plymouth Duster (VL, 340) two-door coupe models. These top quality SuperSoft reproduction parts are made from very durable EPDM rubber, and feature galvanized



steel cores to help them maintain the proper shape and function. The seals are designed for long service life in spite of exposure to the elements, and they are made in the USA. The number is 800-878-2237. On the web it's [www.metromp.com](http://www.metromp.com).

## GO WITH THE FLOW

**N**othing worse than getting stuck in traffic and watching the temp gauge rise until it sticks its tongue out at you. OK, maybe getting your you-know-what caught in the wringer is worse. So make this second-worse. 'Course, increasing your coolant flow can help you and your Mope keep your/its cool. And a high-flow thermostat goes a long way in that department. Tuff Stuff's



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## DO YOU KNOW JACK ... HOOKS?

**L**et's face it, jacking up your Mopar to change a flat or just for exercise can be a real bummer if your Mope slips off the jack and lands on your foot or other extremity (a problem known in the hobby as jack-off). It can ruin your whole day, it can. That's why Tony (the one and only) of Tony's Parts took the trouble to repop the correct jack hooks for the following applications: '68-'69 B-body Road Runner, Coronet, Satellite, Belvedere and GTX (Except Charger), '70-'71 'Cuda and Dart, '70-'71 Challenger and the rare 1970 Road Runner and GTX jack hook. What? Your Dodge Dynasty not listed here? Call Tony and give him a piece of your mind. All these jack hooks are Mopar-licensed and bear the Pentastar and correct part nos. They are even



painted the correct colors so they'll fool even the most critical OE certification judges. So when people tell you you don't know jack ... hooks, tell them you do—thanks to Tony. You can thank Tony directly by calling him at 302-398-0821. Ask to speak to a live person. Too shy to call? Check out his website at [tonysparts.com](http://tonysparts.com).

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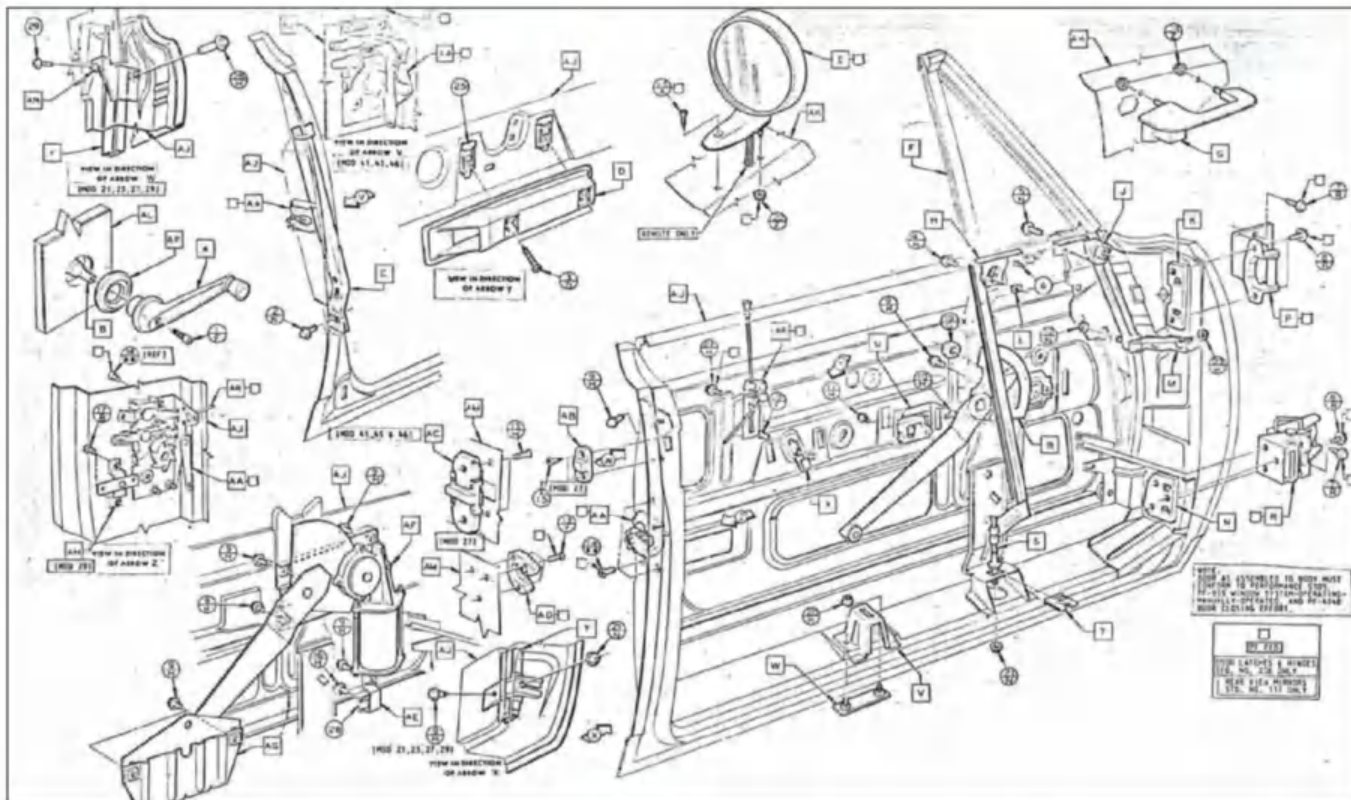
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## ALLS WELL THAT WHEELS WELL

**B**right new automotive trim really sets off a paintjob, and wheelwell moldings add sparkle to fenders and quarter panels. Yet these fragile moldings seem to be doomed to meet every rock or pebble on the road, causing dents, dings, and scratches for all the world to see. Problem is, used or NOS wheel opening moldings are often hard to find today, and quite costly. Not to worry. Auto Metal Direct (AMD) has recently unveiled their brand new reproduction moldings for 1970-76 Plymouth Dusters, made just like the originals. Offered in 4-piece sets, these new moldings are made on brand new AMD tools, and fit correctly. Licensed by Chrysler's official MOPAR Authentic Restoration Product program, these moldings will look great on your car. Wheel opening molding sets are also available for Demon, Dart, and other Dodge or Plymouth A-Body models. Contact AMD at 866-591-8309; [www.AutoMetalDirect.com](http://www.AutoMetalDirect.com).









have a sticker, with the VIN, certifying compliance with Federal motor vehicle standards, typically on the trailing edge of the driver's door.

Darn near every part, from the engine block to the wiper motor, has a date code, these should all be in the believable range for the build date of the car – i.e., anything from a week to several months earlier than the build date. This gets really complex because the date coding systems used on various parts varied widely.

In addition, every significant part on the car should agree with the part number (the last two or 3 digits) called out on the broadcast sheet. What, there's no broadcast sheet available? Does this mean that car can never be "matching numbers"? Not to my mind, but it would probably reduce the value of a really high-dollar car (Hemi this, ragtop that, shaker, etc.)

I have boiled this down to the lowest common denominator. Unfortunately, there's no all-in-one reference to do justice to your question, and I doubt there ever will be. Galen Govier's "white books" probably are the best generally-available reference works (galengovier.com).

## DRAWING DEMAND

A guy I met at a cruise night says you have all the Chrysler blueprints and will give them out. I need to assemble the door hardware for my '68 Road Runner, all I have now is boxes of parts. Can you help?

— Jack O'Leary, Springfield, MA

Jack:

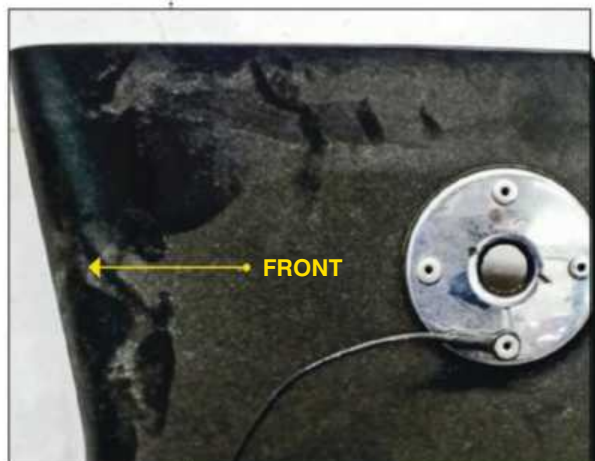
Yes, but first a disclaimer: Your friend overstated, to a large degree, the depth of my factory drawing collection. It is limited to, roughly, '68-'72 B-bodies and all E-bodies, I have no component drawings (i.e., how the wiper motor, fuel pump, rear axle/differential, etc. were built), nothing older than '68, no A-body drawings at all, and very little newer (excepting a huge box of '80s FWD stuff which I'll probably eventually use for kindling).

Anyway, I do have what you're looking for, and, since it applies to all '68-'70

Belvedere and Coronet models, which are quite popular in resto circles, I am reproducing it for you and the huddled masses, see left page. It covers manual and power window regulators, all 2-dr. body styles (coupe, HT, and convertible), but does not include Chargers (even though they are very similar).

## SCREWED?

Rick, I am doing a partial restoration on a '66 Coronet 440, 2-door, 318. The prior owner had disassembled much of the front end (fenders, etc.) and virtually everything under the hood. I now have a giant pail of bolts and such. How can I find out which goes where? I am fairly new to Mopars, please assist me.



Lift-off hood pin bezels were installed with the rivet holes square to the hood perimeter.

— Ross Matthew, Ft. Lauderdale, FL

Ross:

There are several way to go. One is to find (in the flesh, or in pix), either survivor cars (best), or properly restored examples. Another excellent idea is to simply buy a package of called-out, correct hardware from sources such as Mr. G's at mrgusa.com, you would want P/N MO-302.

For '68-'70 B-bodies (and E-bodies), Dave Wise's incredible fastener specification books (see mmcdetroit.com/Market\_Place/) are worth their weight in (trophy) gold. 🍎

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